Egg Standards of Australia for Rearing and Layer Farms:

Interpretation Guideline

November 2019

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Welcome to the Egg Standards of Australia for Rearing and Layer Farms: Interpretation Guideline. This Guideline is intended to provide support and accompaniment to the Eggs Standards of Australia (ESA) for Rearing and Layer Farms (issued November 2019). This Guideline provides guidance only, should not be used as a substitute for the Standard and should be read in conjunction with the Standard. Full details of the Standard including Code Elements, Compliance Criteria and Records required are contained within the Standard. This document helps in the understanding of each Code Element within the Standard and identifies and suggests methods of compliance. Where appropriate, examples are given to explain the type of documents, procedures required and the level of detail that may be required by a third-party certification auditor.

The Guideline and its contents are designed for industry and auditors to help interpret the Standard across all areas of egg farming. The exact requirements for any particular egg farming facility or methodology will, however, be site specific to that site and situation. It is therefore not recommended that users of this Guideline rely solely on the information provided within this document. It is advised that users of this Guideline consider the changing requirements of both legislative and voluntary compliance requirements, and regular checks and consultation are recommended.

The Guideline does not specifically form part of the requirement to achieve certification to the ESA. Farms will, however, need to demonstrate that they have considered the relevant topics included in this Guideline as they relate to the elements of the ESA. Examples are provided in this Guideline for consideration but should be only used in the correct context for the specific business. On-farm practices and activities should be able to withstand challenge by a third-party auditor and be in accordance with good industry practices.

During an audit evidence will be collected and observations will be made by the auditor for each particular requirement. The level of non-conformity assigned by the auditor against a requirement of the Standard is an objective judgement with respect to severity and risk. The judgement is based on the evidence sighted during the audit and is independently verified by the certification body management.

Certification to ESA was developed to establish a common standard for industry practices relating to the rearing of pullets and the farming of eggs from laying hens. The scope of ESA is from the point of delivery of day old chicks or started pullets to the farm, up to the point of removal of started pullets, spent hens or eggs for human consumption from the farm. The primary objectives of ESA are:

- to set out the requirements for best practice in the farming of eggs
- to provide a uniform mechanism for the verification of egg farming practices
- to provide a means of demonstrating best practice and continual improvement.

Participation Levels

Participation in ESA is voluntary and application for certification is open to all egg farmers. Certification to the Standard, however, will only be granted to egg farmers that meet the relevant requirements as set out in the ESA Standard and ESA Program Rules. Each element is classified as Level 1, Level 2 or Level 3, defining the three levels of participation in ESA.

Level	Requirement	Description
Level 1 – Basic	Compliance with Level 1 elements only.	Entry level participation recommended for egg farmers new to the egg industry and to quality assurance systems.
Level 2 – Core	Compliance with all Level 1 and Level 2 elements required.	Intermediate level participation recommended for egg farmers with a more developed compliance system and record keeping.
Level 3 – Comprehensive	Compliance with all Level 1, Level 2 and Level 3 elements required.	Advanced level participation for egg farmers with a fully developed compliance system and record keeping in accordance with the requirements of major retail customers.

Requirements of the Standard

Management

M1 Scope

M1.1 Define the business scope and the scope of certification to ESA.

Level 1: A documented scope statement should be prepared that includes all activities for the business. This may include non-poultry or non-egg related operations. The scope statement should define what is and what isn't included in the certification. A documented process flowchart should be prepared that demonstrates on-farm activities that are included in the scope of ESA certification.

M1.2 Document the business commitment to ESA.

Level 1: A documented Commitment Statement needs to be prepared that references the ESA Program, Rules and, in addition, any relevant legislative requirements based on the State or Territory of operation and business location. The Statement needs to include consideration for vaccinations of long-lived birds in accordance with the National Newcastle Disease Management Plan 2013-2016. The Commitment Statement shall be signed by the owner of the business or the most senior manager at the farm. The Statement needs to be communicated to all workers – this may be achieved during Induction Training Programs and by display in common areas at the farm, such as break rooms or lunch areas.

M1.3 Define the business organisational structure.

Level 1: A documented organisational structure for the business shall include workers with responsibility for ESA requirements and demonstrate working and reporting relationships. A management representative shall be appointed to be responsible for ESA requirements and this person shall be available at the ESA audit. The representative needs to be adequately trained and aware of the ESA requirements, Codes of Practice and relevant legislative requirements. This may be achieved through internal training and mentoring or attendance at ESA Industry Workshops where available. The person should have operational accountability. This is someone who can help demonstrate that the process is adhered to.

M1.4 Provide evidence of registration/licensing for the business.

Level 1: If the relevant local legislation requires the business operation to have a current registration certificate, a copy should be available. This may be a State, Territory or Local Government Business Registration Certificate showing date of validity. Examples include water use license(s), EPA license(s) and/or local council registrations (if applicable).

M2 Documentation

M2.1 Verify compliance with ESA through relevant documents.

Level 1: The farm shall demonstrate that it has documented the relevant procedures and work instructions to comply with the requirements of the ESA. This may be through hard copy documented procedures or electronic formats. For electronic formats, consider having some form of hard copy back-up in case the electronic formats fail during audit. These procedures and instructions shall reflect the on-site operations, provide sufficient detail and be current for the existing farm. As operations change and updates are made to documents, the out-of-date versions shall be removed from use.

M2.2 Legible records to verify compliance with ESA are kept.

Level 1: In order to demonstrate compliance with the ESA requirements, records shall be documented and maintained. These records are reviewed and verified at audit. The Standard specifically defines certain records that shall be maintained at a minimum for daily records for each shed and range. These records shall be maintained in a secure and readable form for a minimum of 2 years. If a specific customer or retailer standard requires, records may need to be kept longer. Mistakes happen, however, documentation needs to demonstrate genuine correction and record keeping. Liquid paper does not demonstrate genuine correction and shall not be used.

M2.3 Legible records to verify ammonia monitoring are kept.

Level 1: The frequency of monitoring of ammonia levels should be conducted based on risk. A documented risk assessment needs to be conducted to demonstrate the historical outcomes of ammonia testing. An example risk assessment has been included in Appendix 2 to demonstrate how this might be designed. This risk assessment will be reviewed by the auditor and shall be supported by test results and other relevant details. The risk assessment inputs shall match the site design and assessment. An annual review, or when processes or infrastructure changes, of the risk assessment needs to be conducted and documented to demonstrate ongoing relevance.

M2.4 Legible records to verify daily ammonia monitoring in free range and barn systems are kept.

Level 3: In line with retailer requirements, for Level 3 free range and barn systems, daily ammonia monitoring records need to be documented and recorded for each applicable shed on the farm. The records need to document what time the test was conducted and by whom. This may be documented on a daily shed record.

M2.5 If producing and/or selling organic eggs, current third party certification is evident.

Level 1: If organic eggs are produced on site under an organic certification program OR the site is selling organic eggs sourced from another site, a copy of the current organic certificate shall be maintained on site. Clear segregation and identification of these products is expected where applicable.

M3 Training

M3.1 Training needs of the business are met.

Level 1: The management representative that was nominated in Code Element 1.3 above is required to identify and coordinate training for the site. This may include induction and any ongoing training identified as required for staff. Training may include bird husbandry/welfare, standards such as ESA, Interpretation Guidelines or specific customer standards training. These training requirements shall be reviewed on an annual basis as a minimum. When workers change or if there are changes to operations, e.g. addition of operations such as free range, cage free or organic, then additional training will be required.

M3.2 Train all workers who complete tasks relevant to ESA.

Level 1: Any worker (including any contractor) who conducts procedures that have been documented for M2.1 to meet ESA requirements shall be trained in these procedures, in conjunction with any training required for workers to carry out activities listed in the Biosecurity Management Plan. Specific on the job training is also required as listed in the compliance criteria for M3.2. This could include euthanasia or culling of birds for specific workers. Consideration should be given to providing training and supporting documentation in appropriate languages to ensure that staff understand the documents and their role. Documentation could include the use of photographs, diagrams or other pictorial instructions where written communication alone is not sufficient or appropriate. Signs and pictures can be particularly useful for communicating cleaning and hygiene practices. Australian Eggs has a number of biosecurity and food safety posters suitable for this very purpose – they are available to order by calling the Australian Eggs office.

M3.3 Training records are kept.

Level 1: Records of internal and external training need to be maintained on site to demonstrate compliance with the documented training program. This may be in the form of training certificates, internal training records or competency certificates. Additionally, course contents may be included and cross-referenced with a record of training, including temporary staff, agency supplied labour, part-time, casual and full-time staff.

M4 Internal checks, audits and corrective action

M4.1 Conduct internal audits to verify ongoing compliance with ESA.

Level 1: The management of a farm shall ensure that there is ongoing assessment of the farming operations and the documented system. Internal auditing is a key factor to ensure ongoing compliance with the requirements of the Standard, and shall be regarded by the management of the farm as being critical to its operation. The scope of the internal audits needs to be established, and the frequency needs to be at least annually. The frequency may be more often in the event of significant changes to the operation. Internal audits shall be conducted by someone who is competent in the relevant procedures and is independent of the particular operation where possible. Auditors should not audit their own work.

M4.2 Complete corrective actions for any non-compliance.

Level 1: There shall be a documented system for corrective action records (CARs). These may result from internal audits, external audits, customer complaints, regulatory issues or routine operations and observations. Good practice is for the CAR to be completed as soon after detecting the non-conformity as possible (this is particularly important where the non-conformity could affect product safety, legality or quality). The CAR record shall include all of the information required in the compliance criteria for M4.2. An important part of an effective corrective action program is to identify the root cause of the problem and implement suitable actions to prevent recurrence. Where recurrence for a non-conformity is identified, it is expected that the owner of the business or appropriate senior manager reviews the CAR.

M4.3 Findings of external audits of ESA are reviewed and managed.

Level 1: Findings made and supplied to the farm, as a result of an external audit against the ESA requirements, shall be maintained and documented on site. Findings requiring actions shall be incorporated into the corrective action process (ref. M4.2) and actioned or managed appropriately. Records need to be documented to demonstrate that these findings have been addressed satisfactorily.

M4.4 Complaints are recorded, reviewed and managed.

Level 1: Complaints are key sources of information that may require escalation into emergency plans such as recall. Complaints are also a key measure of procedural compliance and product quality, and identify opportunities for improvement. Therefore, an effective complaint management system needs to be operated by the farm. Processes should be implemented to effectively identify and correct the causes of complaints, and all complaints need to be captured and the outcomes documented to minimise recurrence.

M4.5 Where an infectious disease outbreak or a food safety issue has arisen, evidence of responses and actions taken shall be kept.

Level 1: In the case of infectious disease or a food safety outbreak the farm shall take action and document all records of any investigations or actions taken. It is expected that the requirements of the corrective action protocols defined in M4.2 are applied to any infectious disease or food safety issues. Records and actions could be documented and logged within the CAR system.

M5 Suppliers

M5.1 Identify and manage materials and services.

Level 1: A documented list of suppliers to the farm (whose products or services may introduce risk) shall be maintained. This should include materials such as feed, equipment, chemicals, livestock, or pest control services. The list shall be current and include details defined in compliance criteria M5.1. Copies of current Safety Data Sheets (SDSs) shall be maintained on file for all chemicals and feed used on the site. SDSs shall be current (dated less than 5 years since issue date).

M5.2 Manage bought-in eggs.

Level 1: Where applicable, if the farm buys in eggs from another supplier, a copy of the certificate from that supplier shall be obtained and maintained on file. The certificate should be either certification to ESA or equivalent (any HACCP based 3rd party accredited certification, or one accepted by major retailers). The labelling of the eggs as cage, barn or free range shall match the certification details for the same eggs and supplier. The certificates on file shall be current for the period that the eggs are purchased and on-sold.

M6 Customer and stakeholder requirements

M6.1 Comply with customer and/or stakeholder requirements and specifications.

Level 1: Many customers have specific requirements relating to product safety, quality, legality and animal welfare. The farm shall ensure that it is aware of these requirements and understands them. Copies of specific customer requirements shall be maintained and implemented on the site, e.g. by incorporating specific customer requirements into procedures and work instructions.

M6.2 Manage non-conformances.

Level 1: There should be a mechanism to ensure that any product or process that does not meet a specific customer requirement is identified, documented and actioned. The CAR register and records can be used for this purpose.

M7 Site security and control

M7.1 A Biosecurity Management Plan is evident.

Level 1: The site shall develop and document a Biosecurity Management Plan that meets the requirements of the National Farm Biosecurity Technical Manual for Egg Production. The latest version of this Manual is available by calling the Australian Eggs office or through the farmer login of the Australian Eggs website. The actions outlined in the plan are coordinated by the sites' designated biosecurity coordinator and all relevant senior staff should be aware of the plan's requirements. The site must have a designated biosecurity coordinator. The designated biosecurity coordinator is the staff member nominated to be responsible for site biosecurity and must be defined and documented.

M7.2 All workers shall be competent in biosecurity controls.

Level 1: The induction training program shall include the biosecurity requirements for the farm. This training is required for all staff who are required to enter the bird or egg handling areas whether they be permanent, part-time, casual or temporary. The training requires inclusion of the biosecurity risks for the handling of birds or pigs outside of the egg farm environment. A Biosecurity Declaration shall be signed and maintained on file for all workers who are required to enter bird or egg handling areas. Records of training shall be maintained on file to demonstrate compliance with the biosecurity training requirements.

M7.3 All visitors and contractors shall be made aware of biosecurity requirements before and upon arrival to the site.

Level 1: A copy of the entry requirements, including biosecurity procedures, shall be provided or displayed to all visitors and contractors before and upon arrival to the site. This may be by facsimile, email or verbal instruction over the phone. A documented record that the visitor has been provided with these procedures shall be kept. Visitors and contractors shall not enter bird or egg farming and storage areas unless they have read and complied with these biosecurity requirements. This may be in the form of 'biosecurity agreement' that the visitor or contractor signs and acknowledges.

M7.4 A site visitor log is available and maintained.

Level 1: The visitor log is a means of capturing important information about people entering the production area(s). The site visitor log should include, but not be limited to, the risks and information as defined in points a. to j. in the Standard. The information given in the log will allow you to make an informed decision about who to let into the production area(s) given the risks they may present. The visitor log should be a significant step in a more complete visitor reporting

process including informing the visitor of relevant biosecurity protocol and the actions required by them to adhere to these. A visitor signing in must declare compliance with the biosecurity requirements for the site. The timeframes given in the standard are a minimum precaution and can be increased if required. Staff should be trained to understand these requirements and be encouraged to make enquiries or report unknown persons on the farm.

M7.5 Access to the site is controlled.

Level 1: To maintain site security and biosecurity, bird and egg handling and storage areas shall be controlled for access. Visitors to the site, and workers who are entering high risk areas such as farming sheds, shall be provided with the appropriate protective clothing. Entry to low risk areas needs to comply with the biosecurity requirements.

M7.6 Entry into sheds/bird housing areas shall include biosecurity controls.

Level 1: The objective of biosecurity controls at the entry to sheds and bird housing areas is decontaminate personnel who are coming into contact with birds and their environment. How the farm manages the biosecurity controls for entry into sheds and ranges needs to be documented and detailed.

When decontaminating hands; washing with soap and water followed by using a sanitiser will be most effective, however where having hand washing facilities available in a shed entrance is not possible; provision of sanitiser alone is sufficient.

If using footbaths, they shall be inspected regularly and maintained in working condition as per manufacturer's instructions. Maintenance may include removing gross material, topping up the disinfectant or replacing disinfectant before it can deteriorate. Boot cleaning devices such as boot scrapers shall be provided in addition to a boot bath, personnel entering the bird housing/range area shall remove any organic material from their footwear before using the boot bath. For preparing a boot bath: You can use bleach diluted to 1% active sodium hypochlorite (the active ingredient in bleach). For example, dilute a bleach solution which is 4% active sodium hypochlorite using three parts water to one part bleach.

Any other farm detergents and disinfectants can also be used as per label instructions.

For producers wanting to create their own footbaths, more information can be found on the Farm Biosecurity website: **https://www.farmbiosecurity.com.au/biosecurity-basics-make-your-own-footbath/**

For producers providing shed specific footwear, rather than boot baths, there shall be a practical amount of boots of appropriate sizing and these boots shall be kept clean.

M7.7 Annual Monitoring for *Salmonella enteritidis*.

Level 1: A monitoring plan, developed in conjunction with a vet, should detail which environments will be tested for *Salmonella enteritidis* (e.g. shed, range, birds, litter, eggs), which swabbing method is to be used (e.g. surface, environmental), how frequently testing is to be conducted and the sample size and swab number (where relevant). The monitoring plan should be based on the farm's risk which will vary depending on many factors including location, number of people and vehicles coming into the production area and whether any items are coming into the production area(s) from other

poultry facilities. For further information on best practice swabbing methods please refer to the Australian Eggs publication 'A Synopsis of the *Salmonella* Incidence Response Plan'.

Production

P1 Site & shed design and set up

P1.1 Site & shed design and set up – general

P1.1.1 Identify property areas and infrastructure on a property map.

Level 1: A documented and current map of the farm and all sheds with dimensions needs to be included in the system. This map shall be current for the existing operations and include all relevant infrastructure, such as sheds, silos, water storage locations and water sources, and all outbuildings. This map is used to determine the boundaries of the site and the production area(s), the scope of the system, and, if free range production is occurring, valid and correct dimensions to determine stocking rate calculations.

A production area is any area where egg production activities are taking place. Production area includes laying and rearing sheds and ranges, grading and packing floors and facilities, and their adjacent spaces. Defining your production area(s) is a fundamental step in planning your biosecurity management as there should be additional entry restrictions placed on the production area(s) that won't be necessary for the whole site. A production area does not include the site office, parking space, homestead. Further information on biosecurity zones can be found in the Australian Eggs Biosecurity Plan Template.

All the information doesn't necessarily need to be present on the same map, for example different features like water lines can be present as an overlay but together all the maps should inform the requirements of P1.1.1.

P1.1.2 Document a detailed shed map or dimension plan for each shed

Level 1: The detailed shed map will be used by the auditor for verification on site and is the basis for various calculations, including stocking densities, water supplies, nesting, perching, cages, outdoor gardens, and pop holes (where applicable). The shed map or plan becomes the basis for sampling by the auditor, and it is recommended that the sample include the smallest, largest and odd shaped sheds for larger farms. Different sheds will be selected and sampled (where appropriate) at each audit to provide a fair and representative sample for the audit.

P1.1.3 Restrict access to egg laying sheds and designated free range paddocks/areas.

Level 1: All animals (with the exclusion of guardian animals) shall be excluded from entering laying sheds and ranges. This includes farm animals, other poultry, domestic animals (cats and dogs), wild birds and other wild animals. No animals (including guardian animals) are permitted at any time in the egg farming, handling and storage areas.

P1.1.4 Design, construct and maintain sheds and mobile hutches to provide a safe, suitable and hygienic environment for birds and egg production and to facilitate inspection.

Level 1: The ingress of water and moisture to the sheds causes a multitude of problems. For example, high moisture creates favourable conditions for pathogens as well as increased concentrations of ammonia. The internals of sheds need to be kept dry and at a suitable temperature. The construction and design of the shed and equipment should be so that it doesn't present any risk of injury to birds, staff or visitors. The materials used to construct surfaces need to be easily cleanable to remove faecal and other matter, and be able to be effectively disinfected.

P1.1.5 Perimeter or individual range fences are in place.

Level 1: Effective fencing needs to be installed to prevent predation, escape of birds (ensuring that birds are secure within the range), or unauthorised access to ranges. Prompt attention should be given to repairs when damage is noted. This includes perimeter fences for the site as well as ranges.

Entry to the production area(s) shall involve a vehicle decontamination procedure, how the farm manages this biosecurity control for entry into the production area(s) needs to be documented and detailed.

The only vehicles allowed inside of the production area(s) should be those required for production. All visitors shall be required to leave their vehicles in a designated parking space outside of the production area(s). Vehicles which are required inside the production area(s) should be decontaminated through a wash down procedure at a minimum from the wheel arches down but including the driver's foot well. It is best practice for vehicles exiting the production area to also be decontaminated. There shall be an appropriately equipped designated vehicle washing space outside the production area(s). Best practise for vehicle washing is outlined below:

- if possible, wash under pressure
- initial wash should be conducted to remove organic matter from the tyres, wheel arches, mudflaps and running boards
- following initial wash, apply disinfectant
    - select mild but effective, broad spectrum disinfectant e.g. Quaternary Ammonium Compounds (QAC) (100-120 g/L), Iodine (16g/L) or oxidising disinfectants
- apply disinfectant in a top-down manner
- leave disinfectant for 5-10 minutes before rinsing off with clean water, also in a top down manner

Australian eggs has produced an instructional poster for vehicle washing which can be ordered by contacting Australian Eggs on 61 294 096 999.

P1.1.6 Design, construct and maintain buildings to minimise any risk of fire or attraction/harbourage for pests.

Level 1: The sheds and equipment should be constructed so that the risk of fire is minimised. Electrical boxes, motors and other electrical equipment should be covered and sealed to prevent birds pecking, rodent access, build-up of organic matter and moisture entry. This minimises the risk of electrical fires. To this end, fire-fighting equipment needs to maintained, e.g. hoses are

kept in good order and functional, fire extinguishers are stamped and current. Rodents are naturally attracted to poultry feed and farms, so minimising the opportunity for pest harbourage is essential. This includes excess equipment storage, spare parts and old equipment lying around. Wherever possible, these items should be neatly stored up off the ground to minimise harbourage.

P1.1.7 Construct and maintain egg belts and nest pads.

Level 1: Automatic nest box systems, including egg belts and nest pads, and manual nest box systems shall be constructed of appropriate materials. The condition and construction of these systems should not result in contamination of eggs, and therefore the belt and nest pad materials need to be suitable for cleaning.

P1.1.8 Design, construct and maintain ancillary rooms to be fit for purpose.

Level 1: All areas of the facility are appropriate for storage, and are of suitable and sound design and construction. These areas need to be well maintained and sealed to prevent access and harbourage for pests, e.g. doors and windows should be close fitting.

P1.1.9 Design, construct and maintain shed flooring to be fit for purpose.

Level 2: Poor design and construction of the flooring of sheds can potentially lead to a multitude of problems. Birds should be able to walk freely without difficulty, and with no risk of foot or claw capture. The floor shall be adequately maintained and routinely checked for condition to minimise risk to the birds' health and wellbeing.

P1.1.10 Design, construct and maintain manure pits to manage the manure produced by each flock of birds.

Level 1: Poor maintenance and design of mature pits, belts and scrapers result in build-up and excess manure. Potential risks of excess manure include health implications for the flock, contamination of eggs and excess ammonia levels. The design of the pits and manure removal systems needs to effectively minimise these risks.

P1.1.11 Design, construct and maintain manure belts to manage the manure produced by each flock of birds.

Level 3: Manure belts need to be installed to ensure that manure from all levels in tiered systems is effectively removed from the flock. The system should be designed so that there is no buildup on the belts resulting in manure touching cages or birds. All areas of the belts should be clearly visible (and accessible as required) to facilitate inspection for cleaning, repairs and maintenance works as required.

P1.1.12 Manage shed air quality to provide a comfortable environment for birds and staff.

Level 2: The air quality of the shed (considering both dust and ammonia levels) should be sufficient to breathe comfortably with no burning sensation of the eyes or coughing due to high dust levels. If it is affecting humans at some level, then it is certainly affecting the flock. Adequate

ventilation should provide suitable air quality; achieved through opening windows, operation of fans and vents installed in the shed for the flock. Ammonia levels shall not exceed 25 ppm.

P1.1.13 Manage shed temperature to provide a comfortable environment for birds and staff.

Level 2: For flock comfort and to avoid heat stress, the temperature within the shed should not exceed 33°C. Records should document and demonstrate daily checks and recording of the internal temperature of every shed. If the temperature exceeds 33°C on a regular basis, cooling systems shall be implemented and verified to reduce the ambient temperature.

P1.1.14 Maintain shed temperature recording devices.

Level 1: The monitoring of shed temperatures may be achieved through manual use of thermometers or automated temperature sensors. These devices need to be working effectively and be suitably located to ensure that readings are accurate and reflective of the true ambient temperature in the birds' environment. Where automatic temperature sensors are in use, monthly inspection and annual calibration is required, and records shall be documented to reflect this.

P1.1.15 Construct, locate and maintain feeding and watering equipment to allow easy access.

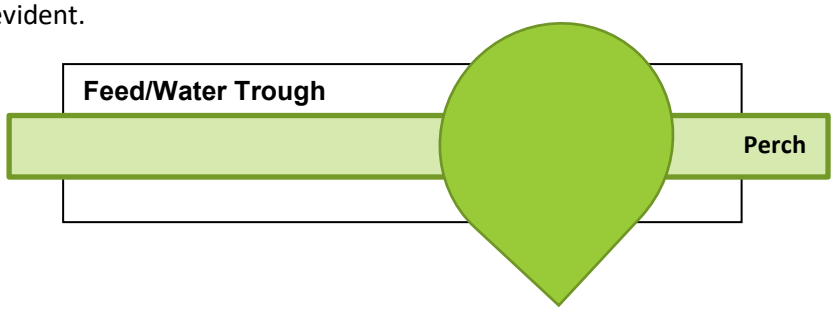
Level 1: Unrestricted access to feed and water prevents aggressive competitive behaviour amongst the flock. Feeding and watering equipment needs to be positioned so that birds can easily access feed and water at all times, not create an attraction for pests due to spillage, and not pose a risk of injury to the birds due to location or design.

P1.1.16 Provide sufficient feeder and drinker space for birds.

Level 1: The Model Code of Practice requirements for feeders and drinkers need to be met for spacing of this equipment. These requirements have been established to provide sufficient access to feed and water and to limit competitive behaviour.

P1.1.17 Construct and locate perches to avoid gross fouling of feeders and drinkers.

Level 1: Perches should be suitably located, away from water stations and feeders to avoid droppings falling into them (where perches are provided). An assessment of perches located in the vicinity of water stations and/or feeders needs to be conducted – where the tail end of a bird extends beyond the edge of a trough or feeder this may be acceptable. No evidence of routine fouling is to be evident.



P1.2 Site & shed design and set up – free range

P1.2.1 Manage internal production shed stocking density.

Level 1: Essentially there are two ways to calculate and determine stocking densities:

Via kg/m²

1. Calculate the metres squared available in each shed, and then for each shed calculate how many birds are housed and their weights. For example, Shed 1 has 18,671 birds and each bird has an average weight of 2 kg so that equals 37,342kg. All available horizontal space needs to be counted as part of the metres squared available in each shed. Available floor space/usable horizontal surfaces should be calculated including perch space. Note: the available floor space of nesting boxes is not to be included, but 'roof' space (the tops of nesting boxes) if made available as flooring shall be counted.

*a) Available floor space in m^2 [A] PLUS (**refer to diagrams below**)*

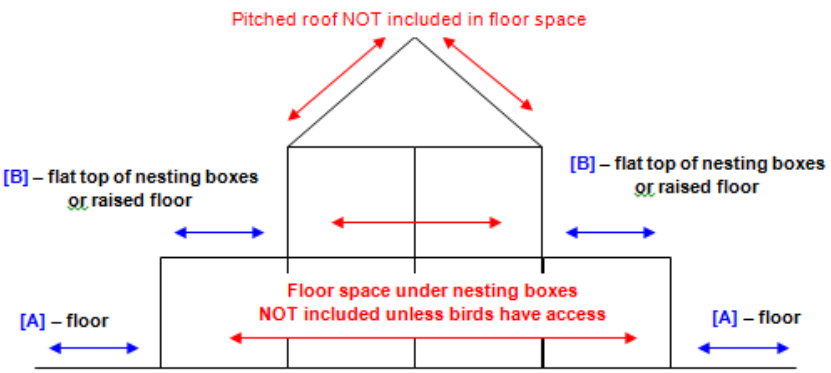
*b) Available raised floor space in m^2 [B] PLUS (**refer to diagrams below**)*

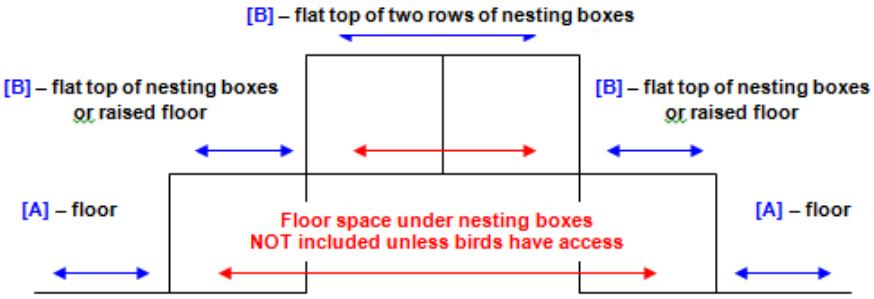
= Total floor space in m^2 [D]

So now divide 37,342 kg by the total floor space to see that Shed 1 meets the requirements of 30 kg of bird weight/m^2.

Via birds/m²

2. Calculate the metres squared available in each shed and then for each shed calculate how many birds are there, e.g. shed 1 has 18,671 birds. Then all available horizontal space needs to be counted as part of the metres squared available in each shed, as described above. So now divide 18,671 birds by the total floor space to see that Shed 1 meets the requirements of 12 birds/m^2.





It is suggested that the site manager keeps records for each shed in a table format and updates the correct bird figures on a weekly basis. This then enables the auditor to verify the stated measurements in the nominated sheds during the audit, to confirm the calculations. The auditors should confirm bird numbers by cross referencing to records for purchase orders/incoming stock. Calculations should be based on the number of birds at the time of audit, and this should take into account cumulative mortalities since initial stocking, e.g. incoming stock – mortalities.

P1.2.2 Construct and locate perches to provide sufficient perching space for the flock of birds.

Level 3: Levels 1 and 2 do not require perches. Level 3 does. For a Level 1 or 2 audit, if no perches are provided, then no calculation of available perch length is required. Calculation of perches (where applicable) is to be conducted based on perches provided in layer sheds at the point of lay.

The 30 cm between rungs relates to the height for a bird to stand up in. The rungs can't be higher than 1 m off the ground, to allow the bird to jump up. Having at least 20 cm between perch and wall allows the birds' sufficient space for tail and head movement without hitting the wall.

Pipes from which feed troughs are suspended can be used in the calculation of perches as long as they are located to minimise droppings falling directly into feed and water stations. Perches that are located so that birds are directly above food and water, with tails extending beyond the side of the trough, may be acceptable. Sources of perches could also include A-frames, other standing units, perching units between nesting boxes, feeder lines and drinker lines.

To calculate an example perch space for Shed 5 with 21,102 birds:

A-frames with 5 rails each 2.8 m long = 14 m per perch unit.

166 A-frame units x 14 m = 2,324 m plus

6 feeders and drinker lines at 116 m = 696 m plus

Nesting box slat (2nd tier) 161.97 m plus

Perching units between nesting boxes 2.3 m x 4 rails = 129.3 m

= (2,324 m + 696 m + 161.97 m + 129.3 m) = 3,311.3 m

3,311.3 m ÷ 21,102 birds = 15.7 cm per bird which exceeds the requirements.

P1.2.3 Manage nesting box stocking density.

Level 1: There are two ways to calculate nesting box stocking density:

1. For single bird nests – ascertain from farm records the number of birds in each shed and the number of nest boxes in each shed, then divide the number of birds by the number of nest boxes. Some sheds have single level nest boxes and some have tiered boxes, which will have to be calculated.

Example calculations:

-Shed 2 with single level nest boxes:

240 nesting boxes for 18,520 birds = 77 birds per nesting box.

-Shed 5 with 2-tiered nest boxes:

264 nesting boxes for 21,102 birds = 80 birds per nesting box.

2. For colony (multiple bird) nests – ascertain from farm records the number of birds in each shed and the number of nest boxes in each shed, then calculate the floor space in m² for each nest box. You will need to measure the width (or depth) and length for each nest box.

Example calculations:

-Shed 2 with single level nest boxes:

0.564 m (Width/Depth) x 1.193 m (Length) = 0.673 m² x 240 nesting boxes = 161.48 m²

18,520 birds ÷ 161.48 m² = ***114.7 birds per m²****, which exceeds the requirements.*

-Shed 5 with 2-tiered nest boxes:

0.564 m (W/D) x 1.193 m (L) = 0.673 m² x 264 nesting boxes = 177.63 m²

21,102 birds ÷ 177.63 m² = ***118.8 birds per m²****, which exceeds the requirements.*

P1.2.4 Construct and maintain nest boxes to allow for egg collection and cleaning.

Level 1: The auditor is expected to view the internal and external condition of the nest boxes and, if possible, how the birds use them and how easy it is for the collectors to gather eggs from them. If there are multi-tiered nest boxes, then check that there are suitable ramps for the birds to use and that they are in fact using them.

P1.2.5 Pop holes shall be located to allow birds' ease of entry and exit to the outdoor range.

Level 1: It is expected that the birds can move easily in and out of the shed via the pop holes as they please. The birds need to be able to access the pop holes from all sections of the shed. All pop holes need to be counted and measured (height and length in cm). Each pop hole shall be at

least 35 cm high and 40 cm in length/width. An example of how this could be documented in an audit report is:

Pop holes are opened at 10am and closed at 8.00pm during daylight savings. Sheds have pop holes only on one side of each shed. Shed 1 has the pop holes on the south side of the shed; with all other sheds the pop holes are on the north side.

> *Shed 1*
>
> *12 pop holes x 3.446 m (length) = 41.352 m for a maximum of 20,676 birds = 500 birds/m =1,000 birds per 2 m.*
>
> *Shed 2*
>
> *13 pop holes x 3.34 m (length) = 43.42 m for a maximum of 21,714 birds = 500 birds/m =1,000 per 2 m.*

These figures demonstrate that the pop holes meet the requirements of 2 metres of opening per 1,000 birds.

P1.2.6 Manage factors that may impede pop hole operation or access.

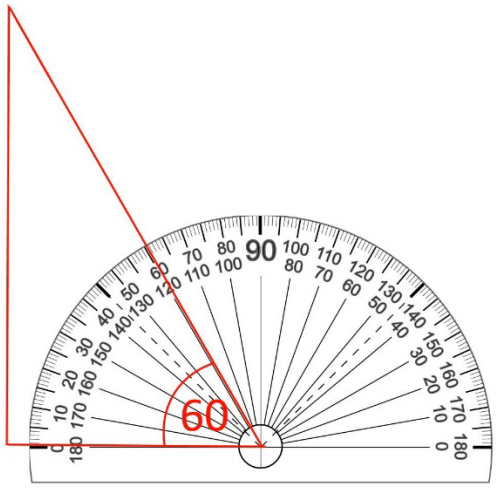
Level 1: The auditors are expected to review, and farms are expected to maintain, the conditions on the outside of the pop holes, particularly if there has been wet weather. Between each flock, records shall be kept of activities undertaken for the range management.

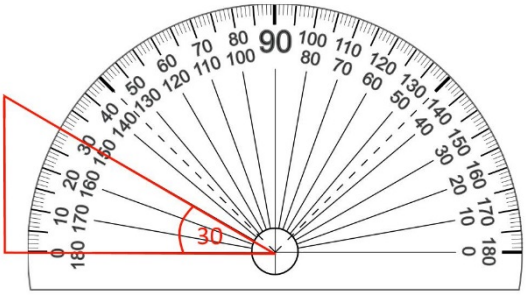
P1.2.7 Construct ramps to be fit for purpose.

Level 2: Ramps should be observed from the outside, and it should be ensured that they are at least as wide as the pop hole length. It is important that the area outside of the ramps (where the birds are walking into) is sloping away from the shed so that the water does not pool. If the ramps are less than 2 metres wide then they shall not have an angle greater than 60°, and if over 2 metres wide then they shall not have an angle greater than 30°. To check this, you should stand at the side of the ramp and check the angle of the ramps incline. A right angle is 90°.

There are various apps that can be downloaded on to your smart phone to assist with the measurement of angles.

A 60° angle looks like this: A 30° angle looks like this:





P1.2.8 Manage outdoor range stocking density.

Level 1: The farm will need to demonstrate compliance with stocking density requirements in outdoor ranges, including how many birds are in each range area and the size of each range area. During an audit, the auditor will choose a number of ranges to measure. Often the largest and smallest ranges will be chosen, or the range with the largest number of birds and the range with the oddest shape where it is difficult to calculate the area correctly. The auditor is then expected to go to those chosen ranges and, with a number of different tools (measuring tape/measuring wheel), to measure the fence lines and any other areas that enable the area of the range to be calculated in square metres.

Triangular areas can be calculated using Pythagoras theorem (ref. Appendix 2). The measurements and findings can be documented as:

> *The auditor calculated the common area and smallest ranges and all flock levels were within the requirements. All sheds have either 2 or 3 range areas plus 1 common area (area adjacent to the pop hole opening).*

Shed 1

Common area = 3,145 m^2

Range 1 = 8,318 m^2

Range 2 = 8,332 m^2

Range 3 = 8,325 m^2

(3,145 m^2 + 8,318 m^2 + 8,332 m^2+ 8,325 m^2) 28,120 m^2 ÷ 18,521 birds = 1 bird per 1.52 m^2, which exceeds the minimum requirements.

Shed 2

Common area = 4,153 m^2

Range 1 = 15,523 m^2

Range 2 = 15,529 m^2

(4,153 m^2 + 15,523 m^2 + 15,529 m^2) 35,205 m^2 ÷ 18,520 birds = 1 bird per 1.9 m^2, which exceeds the minimum requirements.

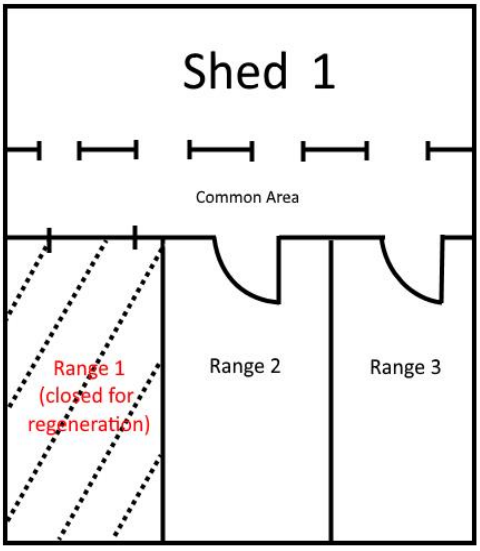
P1.2.9 Manage ranges to allow for regeneration/repair of land.

Level 2: The farm needs to document and demonstrate what the bird/hectare figure is for the farm. If it is below 1,500 birds per hectare then a Range Management Plan is not required. If there are more than 1,500 birds, then the farm should be able to provide a documented Range Management Plan. A Range Management Plan may consist of either a Range Rotation system or a Between Flock system. Stocking calculations are to be conducted on the land available to the birds at the **time of calculation**.

Examples of a Range Rotation system are:

1. *A Range is divided into thirds, with a maximum one third of the range blocked to bird access. Once that third has regenerated, it is opened up to the birds, and a different third of the range is closed off for regeneration. The various thirds of the range are opened/closed on a cycle during the life of the flock.*

   For example:



Shed 1
Common area = 3145m^2
Range 1 = 8318m^2 (but this is inaccessible to the birds, and therefore not counted in calculations)
Range 2 = 12332m^2
Range 3 = 12643m^2
3145 m^2 + 12332m^2+ 12643m^2 = 28,120m^2
28120 ÷ 18,521 birds = 1 bird per 1.52m^2
which exceeds the minimum requirements.

2. *The shed has separate ranges, on either side of the shed. During the life of the flock, alternate ranges/sides of the shed are opened up for the entire flock to access (not just the flock on one side of the shed), thereby allowing the range on the other side to regenerate.*

Between Flock system.

The shed has only one range, which is not divided into sections for regeneration, however, the time between the closure of one flock, and first range access of the next flock is sufficient for the range vegetation to have re-established itself with the assistance of range management activities.

To assess the implementation of the Range Management Plan, the auditor will go out and inspect the range and see how much land is actually unavailable to the birds, and then calculate what

percentage of the range that is. That figure will be compared against that stated in the site map or documentation.

There is no clear definition of the term 'regeneration'. It can mean harrowing the pot holes and loosening up compacted ground around the shed and re-sowing. But it can also be taken as the regeneration of the ground cover/vegetation. The farmer could quite reasonably say that regeneration is occurring in the period between when one batch goes out and the next has access to the range, which is roughly 14 weeks – i.e. 4 weeks to clean up + the 10 weeks between when new birds come into the shed (at 16 weeks) and are let out (up to 26 weeks) = 14 weeks.

As per P1.2.8 (Level 1) and under the Free Range Egg Labelling Information Standard (2017) outdoor ranges shall be large enough to achieve a stocking density of 10,000 birds per ha. 30% of a hectare is 3,000 m^2. Therefore, if 30% of the range is unavailable to hens, you would need additional land (3,000 m^2), to make up the shortfall. Therefore, a farm would need a plot of land totalling 13,000 m^2 if you were going to restrict access to 30% from time to time.

The Range Management Plan also needs to consider and incorporate removal and management of manure in areas of the range where the flock tend to gather regularly. All range repairs that are conducted shall be documented and demonstrated at audit.

P1.2.10 Feed and water provided "in the range" for mobile hutches or for guardian animals shall not be visible from above.

Level 1: At an audit, it is expected that the mobile hutches will be inspected, if they are used, to assess the feed and water visibility and lids. The purpose of this is to minimise droppings, rain and the attraction of wild birds from above. Additionally, water and feed supplied for guardian animals shall also be suitably covered or protected to prevent attraction of wild birds.

P1.2.11 Ranges shall comprise of areas/soil types that allow for birds to create natural dust baths.

Level 3: The entire range cannot be covered in rock, there shall be some areas of vegetation and/or open ground suitable for foraging and dust bathing. There should be adequate areas of soil and vegetation for the birds. During an audit, the auditor will inspect the soil condition and availability of dust bathing areas on the range.

P1.2.12 Protect birds from sun and aerial predators.

Level 1: Overhead shade and shelter shall be provided by either natural means (trees, shrubs, etc.) or artificial means (building awnings, shade-cloth shelters) or a combination of both. Where artificial shelter is provided, the height of the structure should be low enough to discourage aerial predators, but still allow easy movement of the flock. Farm machinery and equipment cannot be used as artificial shade on ranges, nor are they included in calculations at audit.

Shelter should be spread out across the range so as to encourage birds to move away from the shed and around most of the range. Some shelter should be situated close to the shed to provide immediate cover for the flock, with subsequent shelter laid out in a design to encourage birds to move throughout the entire range.

P1.2.13 Protect birds from sun and aerial predators.

Level 3: Overhead shade and shelter shall be provided by either natural means (trees, shrubs, etc.) or artificial means (building awnings, shade-cloth shelters) or a combination of both. Where artificial shelter is provided, the height of the structure should be low enough to discourage aerial predators, but still allow easy movement of the flock. Farm machinery and equipment cannot be used as artificial shade on ranges, nor are they included in calculations at audit. Awnings of buildings that are located within the available range can be included in the shade calculations, based on shade provided at midday.

Shelter should be spread out across the range so as to encourage birds to move away from the shed and around most of the range. Some shelter should be situated close to the shed to provide immediate cover for the flock, with subsequent shelter laid out in a design to encourage birds to move throughout the entire range.

The shade provided on the nominated ranges will need to be calculated, as close as possible to noon in high summer. The shade areas provided by trees can be calculated using the measurement of the shade radius/diameter (ref. Appendix 2).

To calculate the square metres of shade, assuming that the sun is directly overhead, and the stocking density (noting that the stocking density of birds per square metre of shade shall be 15 birds or less):

1. Calculate 25% of the flock size.
2. Calculate the total m^2 of natural and artificial shade on the range.
3. Divide 25% of the flock by 15.

For example, for a flock of 18,521 birds:

Adequate shed with artificial and natural shade.

Shed 1 ranges

25% of the flock size of 18,521 = 4,630.25 birds

The total m^2 of natural and artificial shade on the range:

*Common area = 295 m^2 (natural) + 0 (*artificial*) = 295 m^2*

*Range 1 = 0 m^2 (natural) + 0 (*artificial*) = 0 m^2*

*Range 2 = 193 m^2 (natural) + 0 (*artificial*) = 193 m^2*

*Range 3 = 174 m^2 (natural) + 0 (*artificial*) = 174 m^2*

(295 m^2 + 193 m^2+ 174 m^2) = 662 m^2 total shade

Dividing 25% of 18,521 (i.e. 4,630) birds by 15 means that 308.7 m^2 shade is required.

This information could be documented by an auditor in an audit report.

P1.2.14 Construct, locate and maintain range fences to ensure birds are secure within the range escape and minimise predation.

Level 2: Fence condition should be adequate and there should be no evidence of bird escapes or incursions by predators, e.g. broken fences or holes dug by predators such as foxes, cats, dingos, wild dogs and goannas. All sources of open water should be fenced off from bird access. Fence check records should highlight any incidents of predatory animals gaining or attempting to gain access, and the steps taken to repair such damage (e.g. foxes digging under fences). This may be on a specific 'fence check' record or may be documented in a combined activity record (e.g. shed diary, weekly grounds check).

This information could be written in an audit report:

All fences are in good condition as recently erected.

Weekly fence checking records are recorded on Form 053 – sighted records for the period 08.01.17 – 08.08.17.

P1.2.15 Range fences shall ensure segregation between flocks.

Level 3: The fence condition should be adequate at all times to ensure that there is effective segregation of flocks. There should be no evidence of bird escapes or access between ranges.

P1.2.16 Range areas are maintained.

Level 2: Rodents are naturally attracted to poultry feed and farms so minimising the opportunity for pest harbourage is essential. This includes excess equipment storage, spare parts and old equipment lying around. Wherever possible, these items should be neatly stored up off the ground to minimise harbourage. In free range systems, the range should be well maintained to control any overgrowth that might attract wild waterfowl or other bird species. The auditor will inspect the range to determine if any of the listed items have been dumped/stored on the range. Overgrown lawn and gardens provide coverage and should be managed. Records of maintenance of the external grounds shall be documented to demonstrate compliance retrospectively. In areas where flocks gather regularly, the range needs to be maintained to remove any build-up of accumulated manure.

P1.2.17 Range areas shall not allow bird access to domestic septic tank soak ways.

Level 1: For food safety and bird health purposes, if a domestic septic tank soak way is located inside a range, a barrier or fence shall be erected around the soak way to prevent production birds from accessing the septic water.

P1.3 Site & shed design and set up – barn laid

P1.3.1 Manage internal production shed stocking density.

Level 1: Refer to clause **P1.2.1 Level 1**- as these requirements are identical.

P1.3.2 Construct and locate perches to provide sufficient perching space for the flock of birds.

Level 3: Refer to clause **P1.2.2 Level 3 -** as these requirements are identical.

P1.3.3 Manage nesting boxes stocking density.

Level 1: Refer to clause **P1.2.3 Level 1 -** as these requirements are identical.

P1.3.4 Construct and maintain nest boxes to allow for egg collection and cleaning.

Level 1: Refer to clause **P1.2.4 Level 1** – as these requirements are identical.

P1.4 Site & shed design and set up – cage

P1.4.1 Manage cage production stocking density.

Level 1: **Stocking densities for cages complies with the Model Code of Practice or specific State legislation (whichever is lower)**.

Calculate the floor space per cage in centimetres square. Refer to Appendix 2.

Calculate the average bird weight at time of calculation.

Use the Model Code of Practice table to determine stocking density per cage.

P1.4.2 Construct and maintain cages.

Level 1: The listed conditions of the Standard shall be met at all times. These conditions will be assessed and measured at audit by the auditor. All measurements are in the horizontal or vertical plane. To assess: measure the cage door height and width, and check the distance between the cage floor support wires running parallel to the feed trough. If in doubt, look for the absence of injury or abnormalities on the birds' toes and feet, how much of the toe protrudes through the floor, and the number of toes protruding. For calculation purposes:

To calculate the cage floor space = cage width x cage depth in cm.

Stocking density calculations:

Number of birds allowed/cage = cage floor space (above) cm/550 cm^2.

Number of birds allowed/cage = 2,500 cm^2/550 cm^2 = 4.5 birds/cage.

This figure should then be rounded down to 4.

P1.4.3 Design and position multi-deck cage systems to be fit for purpose.

Level 1: To prevent abject contamination of birds below, ensure appropriate systems for the inspection of birds, and ensure that birds can be removed from cages without injury, and that the condition of the birds living within a multi-deck cage system shall meet the listed points in the Standard.

P2 Inputs

P2.1 Equipment and vehicles

P2.1.1 Manage equipment and vehicle access to the farm site.

Level 2: Biosecurity requirements need to be implemented to manage the entry of equipment and vehicles to the farm. A documented procedure needs to be communicated to all staff. The auditor will verify that this procedure is effectively implemented by discussing the procedural requirements with staff during audit. Control and entry of vehicles and equipment shall be recorded, and documented records maintained to demonstrate compliance.

P2.1.2 Maintain a cleaning and disinfection program.

Level 1: A cleaning program needs to be documented to include all relevant areas of the farm including sheds, egg handling and storage equipment, other equipment and vehicles. Current SDSs (<5 years old since date of issue) should be on file for all chemicals used in the past 12 months, as the auditor will cross-reference chemicals in use and in storage against these records. Records for the end of flock cleaning of sheds and between flock cleaning of sheds shall be documented and available for the audit.

P2.1.3 Manage a cleaning and disinfection program.

Level 2: The cleaning program needs to be defined and documented to demonstrate what will be cleaned, how, when and by whom. The methodology for cleaning needs to be defined, including which chemicals are to be used. Cleaning records and checklists will need to be signed by the operator responsible for the cleaning, and also co-signed and verified by the supervisor.

P2.1.4 Review the cleaning and disinfection program.

Level 2: The cleaning records and checklists, once completed, need to be signed and verified. Responsibility for cleaning and verification of the cleaning activities completed needs to be clearly defined and documented – this is achieved through the signing of the cleaning records by both the cleaning operator and the supervisor. It is expected that the farm management will verify that the cleaning program is effective through site review. Verification of the cleaning and disinfection program needs to include testing that the methods described in the program are effective- this can be done by using sanitiser concentration test strips, ATP swabs, protein presence swabs or microbiological tests (e.g. TVC test). Testing results need to be documented.

P2.2 Feed

P2.2.1 Feed excludes avian protein, mammalian protein is heat treated.

Level 1: No avian protein is permitted to be provided in feed. Mammalian protein supplied in feed shall have been heat treated to destroy any pathogens. This can be demonstrated by documentation kept on file from the feed supplier in the form of specifications and product descriptions, and feed supplier certifications – e.g. Feedsafe or Certificates of Analysis supplied with the feed.

P2.2.2 Manage feed or feed ingredients sourced and delivered by approved suppliers.

Level 1: The supplier and transporter of feed shall be approved. In some cases, these may be two different companies. The methodology for approval needs to be defined. If a contract transporter is used, a written service agreement should be kept on file to confirm that the vehicle has been cleaned and inspected prior to the loading and delivery of feed to the site. A documented procedure is required to define the inspection and/or rejection of feed or feed ingredients, and how this is managed by the farm. These rejection records need to be maintained on file. This could be in the form of a Delivery Register demonstrating relevant records.

P2.2.3 Maintain nutritional information for feed purchased or mixed on site.

Level 2: Nutritional information for feed supplied should be documented in a product specification supplied by the feed supplier. If feed is prepared or mixed on site, the product specifications for each of the ingredients used needs to be maintained on site together with a documented formulation/recipe or in-house specification. The in-house specification needs to be able to demonstrate that the formulation in use provides the relevant and required nutritional needs for the flock.

P2.2.4 Maintain samples and records of all feed and feed ingredient deliveries.

Level 1: A retention sample should be taken of each batch of feed delivered to the farm, or each batch of feed made and mixed in-house. Samples should be collected in a clean tub or container, and clearly labelled with the batch number, ration type and date of manufacture. These samples need to be retained for a minimum of 3 months after consumption in the event of a recall of feed or feed ingredients, or any other event that may require investigation or testing of the feed supplied to the flock.

P2.2.5 Clean and maintain storage infrastructure, including silos, feed lines and transport vehicles.

Level 2: Build up, mould and moisture in feed lines and feeding equipment can result in significant contamination events. Clean and effective management of feed minimises the risk of wild bird and rodent presence on the farm. A routine cleaning program should be established and include feed lines, transport vehicles (if applicable) and feed storage equipment. There should be no evidence of feed spillage.

P2.2.6 Manage feed for each bird.

Level 1: Birds shall be permitted unrestricted access to feed and water during daylight periods, at will within the shed. Feeding practices should be such that there are no induced moulting events. Daily checks need to be conducted on all feed lines to ensure the adequate supply of and access to feed for all birds. Records of these checks need to be documented and available on request.

P2.3 Water

P2.3.1 Manage water availability and access.

Level 1: Birds need to have access to water at all times. The method for water delivery shall only be at acceptable locations such as in the shed and in watering stations for mobile hutches. To verify that access is available at all times, checks need to be conducted twice a day and these records need to be documented and available on request. Other sources of non-potable water that birds might use (e.g. dams, dirty pools of water) should be managed and eliminated. Water supply practices should be such that there are no induced moulting events.

P2.3.2 Manage water storage.

Level 1: The water storage facilities referred to in P2.3.1 need to be of sufficient capacity so that they are able to hold at least 24 hours of water supply. The farm needs to calculate and determine the volume of water required in a 24-hour period, and demonstrate that this volume is less than that in storage, or define and demonstrate what auxiliary water supply is available to the farm in the event of an inability to supply water from the storage facilities.

P2.3.3 Detect water supply failure.

Level 2: There shall be an alert system to identify a failure in the water supply. This may be caused by a blockage or serious leak in the storage facility. This could be an automatic alarm with a siren or phone contact, or a manual system whereby regular checks are conducted of the supply system.

P2.3.4 Manage water provided to birds.

Level 1: Water quality is essential for bird health and egg safety. Therefore, the microbiological limits for suitability (otherwise known as 'potability') of water need to be assessed and demonstrated. Water needs to be sampled and tested at least once per year. The sample should be taken from the delivery point furthest from supply. For example, this may not be the tap furthest from the tank – it may depend on the layout and flow of water through the water distribution system. Where dam, bore or river water is used, the sample should be the furthest point from the pump or water storage facility on the farm. Water samples shall undergo microbiological testing by a NATA (or equivalent) registered laboratory, and results shall be below the limits specified in the Standard. The the currency of NATA accreditation and scope of testing can be verified at **https://www.nata.com.au/nata/orgs-and-facilities/advanced-facilities-search.** Test records shall be kept on file to demonstrate compliance with the limits and frequency of testing.

Microbiological quality limits:

- Total colony count: ≤1,000 cfu per 100mL
- E. coli (Faecal coliforms): <1 per 100mL
- Coliforms: ≤1,000 cfu per 100mL

P2.3.5 Municipal water shall be compliant for use.

Level 1: Where municipal tertiary treated water (otherwise known as 'town water') is used, it shall meet the same microbiological standards as defined in P2.3.4 of the Standard.

P2.3.6 Bores and wells shall be suitably constructed.

Level 1: The design and construction of a bore shall prevent contamination from water runoff and general contamination on the ground from surrounds. The bore needs to be sealed effectively. If a well is used it needs to be covered to prevent entry of contamination to the well e.g. faecal matter or animals entering.

P2.3.7 Bore/well water shall be compliant for use.

Level 1: Where bore and/or well water is in use, the microbiological quality shall meet the same microbiological standards as defined in P2.3.4 of the Standard. Test results shall be less than 12 months old and retained on site. If the bore/well water does not meet the standards defined in P2.3.4 treatment records shall be maintained to demonstrate that the free available chlorine levels of holding tanks are not greater than 5 ppm. Treatment should achieve microbiological standards as described in P2.3.4 to ensure safety of the water supply.

P2.3.8 Surface water (e.g. creek, dam, rainwater) supply shall be compliant for use.

Level 1: Where surface water supplies are used they also shall meet the microbiological standards as defined in P2.3.4. Test results shall be less than 12 months old and retained on site. If the surface water does not meet the standards defined in P2.3.4 treatment records shall be

maintained to demonstrate that the free available chlorine levels of holding tanks are not greater than 5ppm. Treatment should achieve microbiological standards as described in P2.3.4 to ensure safety of the water supply.

P2.3.9 Meet legal and/or other requirements.

Level 1: If it is required by local or state/territory regulatory requirements, a current water licence shall be maintained on site. The conditions for drawing water under the relevant water licence (if applicable) shall be complied with.

P2.4 Floor litter

P2.4.1 Manage floor litter (where litter is used).

Level 1: Litter shall be sourced from suppliers that have been approved. It shall be clean, free from contamination, and intake inspection records shall be maintained and demonstrated. The same requirements apply to litter made in-house. Components used shall be clean, and records kept of batches made and the formulation.

P2.4.2 Maintain floor litter in sheds in a clean, dry and friable condition.

Level 2: Floor litter should be kept dry and in clean, good condition to prevent disease and health issues. Records should be maintained to demonstrate that the condition of the litter has been checked and any actions taken to correct the condition are also recorded.

P2.4.3 Manage used floor litter.

Level 3: If collected used floor litter is utilised for soil conditioning or fertiliser it shall not create any adverse environmental impacts. The litter should not be stored in a way that allows run off from the litter to leak into the water supply. If permits are required for disposal practices, they shall be complied with to ensure that there is no environmental risk.

P2.5 Chemicals & veterinary medicine

P2.5.1 Store, secure and manage chemicals and veterinary medications.

Level 1: Chemicals used and stored on site shall be managed in a way to prevent accidental or deliberate contamination. Chemicals should only be stored in their original containers, very clearly labelled (even after dilution), and in a secure and locked cupboard or room. Medication chemicals shall be stored separately from other chemicals. A separate cupboard or room may be used. Empty chemical containers can pose a chemical risk to anything else that they are used for, and therefore shall not be used for contact with water, feed or eggs. A register of the chemicals in use shall be maintained to demonstrate their use.

P2.5.2 Manage vaccines and prescribed medication usage according to prescription.

Level 1: Medications used on site need to be applied in a responsible manner in accordance with the prescription. Inappropriate use of medications can result in eggs that are unsafe for sale and/or consumption. Vaccines and prescription medications shall be administered in accordance with the prescription supplied, and clear records documented to demonstrate this. Copies of prescriptions shall be held on file including any documentation relating to the vaccination program.

P2.5.3 Eggs shall not be supplied for human consumption during any labelled withholding period.

Level 1: Medications with a withholding period have the potential to leave a residual in eggs sold for human consumption. The specified withholding period provided on the medication shall be complied with and records shall be maintained to demonstrate this compliance retrospectively.

P2.5.4 Manage withholding periods where shed surfaces have been treated with chemicals.

Level 1: Chemical treatments in sheds have the ability to contaminate the flock and/or eggs in contact/ in the area. If there is a withholding period for the chemical used then it shall be complied with prior to re-stocking. Records need to demonstrate compliance. Phenolic or disinfectants with odours should not be used in bird sheds.

P2.6 Pest control

P2.6.1 Document and implement a program for managing pests.

Level 1: A pest control program needs to be documented and implemented that effectively demonstrates appropriate control of identified pests. Consideration should be given to predators including foxes, dingoes, eagles and predatory animals that may be protected, e.g. wedge-tail eagles. Typical documentation should include the type of controls, frequency of servicing, who is responsible and what checks are done. SDSs for any chemicals used shall be maintained on site and records of all services documented and maintained.

P2.6.2 Pest control workers shall be suitably qualified and/or trained.

Level 2: Operators undertaking pest control activities on site need to demonstrate their competency to do so. If an external provider is used for pest control services, a copy of the technician's current permit/licence should be kept on file. If pest control is managed internally, training records for the relevant staff member/s should be kept on file.

P2.6.3 Manage bait and bait stations.

Level 1: The use, application, location and security of pest control devices on site need to be carefully managed and considered to minimise the risk of contamination of the flock, feed, water

or eggs. A documented map should identify the location of all devices, and bait stations need to be secured and locked. They should be placed so that birds cannot access them, and dead rodents need to be collected and disposed of efficiently and quickly. Birds consuming dead rodents can potentially become affected by the bait. Frequency of bait station inspection is to be determined by the site, based on risk assessment. Risk assessment should take into account the type of active ingredients/station being used, the season and apparent levels of rodent activity. The risk assessment needs to be documented, with reasons for the chosen approach to monitoring justified. All inspections, replacement of baits and any other relevant activities need to be documented to demonstrate compliance with these requirements.

P2.6.4 Measures are taken to provide protection from predators.

Level 1: Wild birds such as ducks and pigeons have the potential to introduce disease to the flock, and should be prevented from entering the flock wherever possible. Windows, doors and all other potential entry points need to be screened to prevent their entry (with the exception of pop holes). Other pests such as foxes, wild dogs and dingoes should be prevented from access by fencing at the boundaries.

P2.6.5 Manage free range areas.

Level 2: Wild water fowl such as ducks have the potential to introduce disease to the flock, their presence is discouraged through maintaining the range and preventing areas where water could pool. Where there are dams and surface water areas in and around the range, they shall be fenced off and the laying flock restricted from entering those areas.

P2.7 People

P2.7.1 Manage access to the property and production sites.

Level 1: For biosecurity purposes, entry to the property and all production areas of the property needs to be controlled so that only authorised persons are permitted. All entry events shall be recorded and documented to capture this information. An entry log could be used for this purpose.

P2.7.3 Workers shall comply with personal hygiene and handwashing requirements.

Level 1: Personal hygiene requirements shall be defined for all staff, and this includes hand washing and the sanitising of hands before handling eggs. Hand cleansers and sanitisers shall not contain any perfumes of phenolic-based chemicals to avoid the tainting of eggs.

P3 Bird Receival and Placement

P3.1 Manage identification and traceability of birds.

Level 1: Traceability of birds through the life-cycle on the property is essential to enable demonstration of compliance with many aspects of the Standard. The information required to be recorded as defined in the Standard (e.g. the number of birds, age, medication history) is all used to demonstrate withholding periods, stocking densities, perching space, etc.

P3.2 Pullets shall be sourced from an appropriate rearing system.

Level 3: For the authenticity of claims and to ensure consistency, it is essential that pullets are sourced and transferred to and from appropriate rearing to production systems. Pullets raised from cage rearing systems should not be used for barn or free range egg production.

P3.3 Inspect birds at arrival.

Level 1: For welfare and record keeping purposes, the condition of birds on arrival at the property should be checked and recorded. This may be documented on the intake records. Mortalities should also be clearly recorded, as well as the general condition of the birds.

P3.4 Manage animal welfare.

Level 1: At intake, it is expected that welfare checks are conducted when the flock is new, to ensure there are no significant concerns. Initial checks on the set up of free available feed and water are essential to ensure that there are no competitive behavioural issues. Records of these checks shall be conducted. Records of the weights of a sample of birds should be kept. 1% of the total flock weighed should provide an indication of the flock health. Weight checks should be documented to assist in the assessment of health and feeding in the early stages of new flocks.

P4 Flock Management

P4.1 Minimise break treatments.

Level 1: For welfare purposes, beak trimming may only be conducted on chicks <24 hours old. There are other limitations to beak trimming, and these are designed to ensure minimum pain and impact on functionality and behaviour. Beak trimming may only be performed on a bird >24 hours of age with written consent by a veterinarian. In all cases, beak trimming may only be performed by an operator deemed competent in the procedure. Records shall be documented of any and all beak trimming activities.

P4.2 Manage lighting for birds from point of lay.

Level 2: Lighting management is essential in the management of poultry farms, as lighting is a significant factor in the functioning of the birds' reproductive system. Best practice indicates 15 hours of light per 24 hours, however, the Standard calls for a minimum of 8 hours of continuous light per 24 hours (for birds from point of lay). Documented records of lighting schedules and timers (on/off) shall be maintained to verify compliance with Standard's requirements.

P4.3 Manage darkness for birds from point of lay.

Level 1: As above, a minimum of 8 hours of continuous darkness shall be provided to the birds from point of lay to allow adequate rest and recovery periods. Where variations to this program are implemented (for example, during hot summer periods when midnight feeding may be required), records of these variations shall be documented, and an appropriate justification with evidence shall be supplied.

P4.4 Manage graduated "dawn and dusk" light periods for free range and barn systems.

Level 3: In free range and barn sheds, sudden changes in light levels can result in pile-ups or stress behaviour. To ensure the birds have sufficient time to settle in of an evening or rouse in the mornings (as is normal behaviour), there should be a graduated light intensity change. This can be achieved using timers for control over lighting, and the staggered introduction of lighting up and lighting off. Or opening window coverings to allow the natural dawn and dusk to illuminate the shed.

P4.5 Control flock activity/behaviour.

Level 3: The ability to control flock behaviour when required is a requirement of the Standard. This can usually be achieved by a reduction or an increase in lighting intensity on an ad-hoc basis or as required. The methodology for control over flock behaviour needs to be documented in a procedure, and records documented and maintained if and when it is used.

P4.6 Manage light intensity in sheds to allow for bird inspections.

Level 1: Levels of lighting in sheds should be adequate to ensure that bird inspections can be conducted effectively. Inadequate lighting may make identification of health or behavioural problems difficult. The use of multi-level systems would require the lighting to be provided at different levels, to ensure that lighting is adequate for inspection purposes throughout all of the levels. Adequate lighting is generally considered to be at least 10 lux (where 50 lux is the lighting in a lounge room). As an example, if body of text in a newspaper cannot be read clearly then the lighting would be considered to be inadequate.

P4.7 Maintain general lighting levels.

Level 2: Lighting levels as described above have a significant impact on the health and the cycle of the bird and the ability for inspection. 10 lux is the normal minimum limit and, under certain circumstances, 5 lux or lower could be used to manage the welfare of the flock, e.g. for medication/treatments.

P4.8 Maintain flock production records.

Level 2: The production of eggs and management of the flock, including the trending of egg production, is to be documented and records maintained. These records will be used to demonstrate mortality rates, the volume of eggs that have been collected, and culls as required. Records need to be maintained and available back to the previously conducted audit, and should be available at audit for review for every shed. This includes all relevant daily and weekly records.

P4.9 Manage bird health and welfare.

Level 2: A procedure needs to be documented to define and describe how bird health and welfare are managed. All staff should be trained and aware of the requirements of the procedure, and this will be verified at audit by interview with staff. A daily checklist needs to be documented, and records completed that demonstrate the checks conducted on flocks for health and welfare.

P4.10 Report and investigate changes in bird performance or health.

Level 2: If the daily checks above indicate that there is a concern or issue with behaviour, health or mortality, it needs to be investigated immediately. The farm manager or most senior person on site should be notified and a veterinarian should be consulted if the issue is health related. Actions taken to address the problem shall be documented and the details of the investigation shall be included in these records.

P5 Laying

P5.1 Laying – free range

P5.1.1 Birds shall have unrestricted access to provisions.

Level 1: In free range environments there should be no restrictions of access to feed, water and nesting boxes within the environment during daylight hours. All individuals within the range should have unrestricted and unfettered access at all times to these provisions.

P5.1.2 Birds have had adequate access to the range before eggs may be labelled as free range.

Level 1: For eggs to be labelled as free range, the birds shall have had at least 24 hours access to the range. Therefore, eggs collected within the first 24 hours cannot be labelled free range. The age of the birds when first accessing the range shall be documented, and they shall not be older than 26 weeks at first access. Records to demonstrate this shall be maintained

P5.1.3 Birds have unrestricted and meaningful access to an outdoor range.

Level 1: For at least 8 hours per day, birds in a free range system shall have unrestricted access to the outdoor range. The only exceptions to this rule include when there is less than 8 hours per day of daylight (therefore it cannot be achieved); when there are adverse weather conditions such as heatwaves, storms, outbreak of disease, presence of predators, etc.; or medical treatment is being administered due to serious disease or outbreak. If pop holes are arranged appropriately, and shelter, feed and structure are provided throughout the range, this should be utilised to encourage the birds to wander throughout and utilise the range.

P5.1.4 Record periods of lock-in of more than 72 consecutive hours.

Level 1: For free range operations, there may be circumstances where birds are required to be locked in for periods. Where this period extends beyond 72 hours on a continuous basis, this shall be documented and the record should show the reason, dates and times that this occurred. If this occurs, a review shall be conducted of the conditions under which the eggs are produced, and this

should include consultation with relevant customers to determine under which system the eggs were produced. The eggs shall be packed or identified in accordance with the agreed customer requirements.

P5.1.5 Manage access to winter gardens.

Level 3: In free range systems where winter gardens are used or provided, the birds should be able to access the winter gardens from at least 26 weeks of age and for a minimum of 8 hours per day.

P5.1.6 Maintain a log/range diary.

Level 1 In free range systems, the diary should record the date, time, weather conditions and if/when pop holes were not opened and why. This diary should be documented for each shed or range and clearly detail when pop holes were re-opened. These records demonstrate compliance with P5.1.3 where appropriate.

P5.1.7 Manage electric pulse wires.

Level 2: In free range systems, electric pulse wires are used to deter birds from perching or roosting in areas that either result in contamination of feed or water supplies, or laying in locations that make egg collection difficult or contaminates the eggs. When wires are used, it should not be on a continuous basis but only sufficient to initially train the birds to avoid these areas. During the training periods, records shall be kept including location and duration of training use.

P5.2 Laying – barn laid

P5.2.1 Birds shall have unrestricted access to provisions.

Level 1: As per P5.1.1 above but for barn laid systems – same requirements (during daylight hours).

P5.2.2 Manage access to winter gardens.

Level 3: In barn laid systems where winter gardens are used or provided, the birds should be able to access the winter gardens from at least 26 weeks of age and for a minimum of 8 hours per day.

P5.2.3 Manage electric pulse wires.

Level 2: As per P5.1.7 above, but for barn laid systems – same requirements.

P5.3 Laying – cage

P5.3.1 Manage housed birds within a shed.

Level 1: In cage systems, the birds shall be continuously caged within the system and if birds escape they shall be returned to the cage in a timely manner. They should not be left to wander outside the system. It shall be demonstrated how this is managed in periods where staff are not always present, e.g. on weekends or long weekends.

P5.3.2 Manage electric pulse wires.

Level 2: As per P5.1.7 above but for cage laid systems – same requirements.

P6 Egg collection, storage and dispatch

P6.1 Manage egg collection.

Level 1: Procedures shall be documented and defined to demonstrate compliance with egg collection requirements (minimum of once every 24 hours). It shall be demonstrated how this is managed in periods where staff are not always present, e.g. on weekends or long weekends. If alternative measures are implemented (e.g. periods >24 hours), then a documented risk assessment needs to demonstrate that there are no adverse effects by doing so (please note this is not applicable to SA producers).

P6.2 Maintain egg collection records.

Level 1: Egg collection records need to clearly document and demonstrate egg collection activities, quantities and types. It is expected that floor eggs should be collected several times a day to minimise faecal or other contamination of the egg. As shells are porous, wet eggs are not permitted to be used for human consumption and shall be disposed of.

P6.3 Handle eggs to minimise the risk of egg contamination.

Level 1: Contamination of eggs typically occurs through overhead fittings, walkways, manure, contact with equipment, and general handling. Because egg shells are porous, any level of moisture encourages the introduction of bacterial contamination to the egg. Protection of eggs that have been collected is important to minimise this risk. When eggs are being moved or transported from collection to packing they should be adequately protected from moisture, and any walkways over conveyors should be protected to prevent contamination of the eggs from boots or shoes.

P6.4 Store eggs to minimise the risk of egg contamination.

Level 1: Contamination of eggs may occur during the collection, storage, packing and handling processes. To minimise this risk, it is important that eggs are handled and stored in a manner to avoid this. Within 24 hours of collection, the eggs should be stored in cool storage operating between 4 and 15°C and shall not exceed a temperature greater than 18°C. Storage of eggs at cool temperatures has been clearly demonstrated to minimise the risk to the human food supply chain from the risk of pathogens such as *Salmonella*. To demonstrate compliance with this requirement, cool storage records shall be maintained and logged. Humidity and moisture are a significant risk and, as a result, eggs should be stored in cool dry areas at all times. Once eggs have been moved to chilled storage they may not be stored or transported again in ambient conditions.

Given that some disease-causing agents e.g. *Salmonella* can survive on plastic and cardboard; any cardboard or plastic egg filler or flat which comes from another egg farm needs to be decontaminated if it is being re-used on your farm.

Decontamination of plastics can be approached in a two-step manner. The first is the removal of all visible organic matter and dirt (cleaning) and the second; sanitising. Sanitising can be done by:

• soaking items in very hot water: it is recommended that the items be immersed in water at a minimum temperature of 77°C for at least 30 seconds. The water temperature may need to be monitored with a thermometer to confirm it remains hot enough for the whole sanitation period.

• soaking items in diluted bleach

• saturating items with 70% alcohol

• applying a commercial food-grade sanitiser according to the manufacturer's instructions, with particular attention to the required concentration and contact time

Appropriate chemical sanitisers include chlorine-based compounds (e.g. hypochlorite or bleach), quaternary ammonium compounds, alcohol, iodophors (iodine), organic acids (e.g. peracetic acid) and hydrogen peroxide. Chemical sanitisers should always be used as per manufacturers instructions.

Plastics need to be dried completely after sanitising before being reused.

Given the difficulty in effectively decontaminating cardboard, it is advisable not to reuse cardboard egg flats/ fillers. If choosing to reuse cardboard, decontaminate by first removing all visible organic matter and dirt then heat treating. Heat treat cardboard by baking at 75°C for 20 minutes.

See the following page for more information, including the particulars of bleach sanitisation:

https://www.foodstandards.gov.au/publications/Documents/Safe%20Food%20Australia/Appendix%206%20-%20Cleaning%20and%20sanitising%20surfaces%20and%20utensils.pdf

P6.5 Monitor and maintain cool room equipment.

Level 1: To demonstrate the ongoing maintenance of the temperature of eggs in storage, daily monitoring of temperature needs to be conducted and records maintained. The equipment used for monitoring and measuring temperatures needs to be calibrated to ensure that readings are true and accurate. Calibration shall be conducted on a 6-monthly basis as a minimum, and records documented to demonstrate compliance with this requirement.

P6.6 Manage own refrigerated transport to minimise the risk of egg contamination.

Level 2: In circumstances where the farm conducts its own refrigerated transport, it shall demonstrate that it complies with the same requirements as for storage. The vehicle shall be capable of operating in the 4 to 15°C range, and the equipment used for monitoring and measuring temperatures needs to be calibrated to ensure that readings are true and accurate. Eggs should never be stored or transported warmer than 18°C. Calibration should be conducted on a 6-monthly basis as a minimum, and records documented to demonstrate compliance with this requirement. Daily monitoring of temperature needs to be conducted and records maintained.

P6.7 Manage third party refrigerated transport to minimise the risk of egg contamination.

Level 2: Temperature control of eggs being transported by a contractor shall also be maintained in the 4 to 15°C range. Eggs should never be stored or transported warmer than 18°C. One way to manage this is to specify in the supplier agreement or contract that the delivery truck must maintain the storage temperature in this range.

P6.8 Manage farm or farm gate sale or supply of eggs.

Level 1: If eggs are sold directly from the farm, they shall meet all of the required regulatory requirements (local, state/territory and federal) including truth in labelling, weight and quantity, and food safety requirements (no cracked eggs, no visible faecal matter). Records shall be documented for all eggs sold directly from the farm or supplied from the farm and, where eggs do not meet requirements, records of disposal shall be kept.

P7 Egg identification, traceability and recall

P7.1 Maintain an identification and traceability system to enable eggs to be traced from production to supply.

Level 1: Traceability throughout the supply chain is a regulatory requirement for all foods, including eggs. The Standard requires that traceability information shall be maintained for eggs from the collection point at the farm (including farm ID), including the date and type of system through to the despatch of the eggs. This requirement also applies to eggs sold or supplied

directly from the farm – records shall be maintained to comply with regulatory requirements. Records need to be maintained by the farmer to demonstrate that traceability has been managed.

P7.2 Manage externally sourced eggs.

Level 1: Similar to the requirements in P7.1, traceability of incoming eggs shall be documented, including intake records, type, purchase information and transfers. This assists in tracing and accounting for all eggs on farm, including those sourced or purchased from external sources. This traceability should clearly identify the type of eggs purchased, and where, when and how they were used. The responsibility for verification that the consignment has appropriate traceability lies with the receiving producer/processor. Records need to be documented to demonstrate this.

P7.3 Manage egg traceability for each production method undertaken on site.

Level 1: It is a regulatory requirement to maintain truth in labelling so that eggs produced under a particular system are accurately labelled and sold as such. To this end, when there is more than one type of production system on site, there needs to be a clear and defined system for segregation. An annual verification exercise should be conducted and documented to demonstrate reconciliation of eggs from each of the production systems. The exercise shall include reconciliation of at least 3 days of production from each of the systems, and be clearly documented to demonstrate compliance. Where applicable, this exercise would include eggs purchased from external sources or suppliers.

P7.4 Maintain a product recall procedure enabling unsafe eggs to be effectively recalled.

Level 1: In the event of a significant hazard and where the product does not meet regulatory requirements, it may be necessary to recall product from the market. Preparedness is the key in recall situations and, as a result, the Standard requires the farm to have a documented recall procedure. The procedure needs to be communicated to staff who are likely to play a key role in the recall and management of product and processes. These key staff shall be trained to understand how a recall operates and the specific requirements of the recall procedure. FSANZ provide a Food Recall Protocol at foodstandards.gov.au and this document provides guidance in writing a food recall plan. Key customer and staff contact details should be kept up to date to assist in quick communications in the event of a recall.

P8 Management and disposal of farm waste

P8.1 Bird management and disposal

P8.1.1 Manage removal and disposal of dead birds.

Level 1: The record may be a specific record, or may be documented in a combined activity record (e.g. shed diary, daily check sheet). The record should indicate:

- the date of the check
- the shed identification
- the number of dead birds found
- cause of death (if known).

The farm should ensure that dead birds are removed from the shed or range on a daily basis and that the disposal methods used cannot become a source of contamination for other animals and water sources, or an attraction for predatory or scavenging wild animals. The system of disposal should prohibit access by all other animals.

P8.1.2 Manage the humane disposal of live birds at end of the laying cycle.

Level 1: It is expected that the farm will have an implemented procedure that ensures that live birds are handled, transported and/or slaughtered as humanely as possible. The auditors will review the records and ensure that they cover all listed aspects.

References:

- "Development and Extension of Industry Best Practice for On-Farm Euthanasia of Spent Hens"

- Practical Slaughter of Poultry: A Guide for the Small Producer, 2nd Edition, Humane Slaughter Association; www.hsa.org.uk.

P8.1.3 Modified Atmosphere Killing (MAK) shall be carried out to industry best practice.

Level 1: As a sensitive topic outside of industry, best practice for the humane disposal of spent hens should be conducted in accordance with industry guidelines: "Development and Extension of Industry Best Practice for On-Farm Euthanasia of Spent Hens".

P8.1.4 Manage catching, culling and transport of hens (including pullets, spent hens).

Level 1: The auditor should verify the training records for stock staff by a cross-reference against the staff training records for catching birds. The training records should document and demonstrate that staff can catch and are competent to do so. A review should also be conducted for the contract agreements for the transport of birds where a contract transporter or a contract pullet provider is used, to ensure that it is current and includes the requirements of the Model Code of Practice.

See the Livestock Transport Standards and Guidelines (http://www.animalwelfarestandards.net.au/land-transport/)

P8.1.5 Contingency plans shall be in place for the emergency humane slaughter of flocks.

Level 1: The site should maintain a contingency plan for incidents other than emergency animal diseases (in which case refer to regulatory guidelines), and ensure that it covers the relevant aspects. Records of any emergency slaughter action shall be maintained, and include at a minimum:

- date of the emergency event
- nature of the emergency event
- number of birds to be slaughtered
- method of disposal (e.g. on-sold live, Modified Atmosphere Kill (MAK), cervical dislocation)
- if applicable, transport company name, contact details and vehicle registration
- disposal destination (e.g. external disposal site, on-farm disposal site)

P8.2 Manure management and disposal

P8.2.1 Waste is managed and appropriately disposed of.

Level 1: The auditor is expected to view the condition of the waste disposal practices for egg products and by-products on site and compare it against the farm's documented waste disposal program. The disposal practices should be managed so that they are not an attractant to pests.

P8.2.2 Maintain a manure management program.

Level 3: The auditor is expected to view the condition of the manure disposal practices on site and compare it against the farm's documented manure management program, and ensure that the record held demonstrates compliance with the defined program.

P8.2.3 Manage manure pits.

Level 1: The auditor is expected to view the condition of the manure pit/s and the size of the clearance space between the shed floor and top of the manure stack. A manure pit may also be an area under the slats or area under the cage sheds where manure accumulates (where there are no manure belts to take it away). The auditor should review the records of shed clearance at the end of each flock. The record may be a specific record, or may be documented in a combined activity record (e.g. shed diary).

P8.2.4 Manage manure belts.

Level 3: Manure belt build-up should be maintained and managed in a way that manure build-up should not come in contact with the cage or flooring. Manure belts need to be cleared at least weekly, and shed/cleaning records and programs should reflect this.

P8.2.5 Prevent bird access to manure pits or manure storage areas.

Level 1: The auditor is expected to view the manure pits and check that no birds are located there, and have no access to the manure pits. Barriers shall be in place to prevent birds from gaining access to manure pits, manure storage areas and used litter storage areas.

Daily inspections shall be undertaken to ensure that birds have not found access into manure pits, manure storage areas and used litter storage areas. The record may be a specific record, or may be documented in a combined activity record (e.g. shed diary).

P8.2.6 Measures are taken to prevent leachate from farm facilities or contaminated rainfall run off reaching water sources.

Level 2: Consider the following contamination of water sources:

http://www.radionz.co.nz/news/national/323594/tests-reveal-source-of-havelock-north-water-contamination

Associated issues have been demonstrated at chicken farms to be related to such an outbreak:

- A *Campylobacter* outbreak in the town of Havelock North in August 2016 made over 5,000 people violently ill and has been linked to 3 deaths.
- The Havelock North drinking water supply was contaminated last year by a surface pond less than 100 metres from the bore. For the dye tracer test, scientists raised the pond level to where it was on 6 August 2016 after heavy rain and added a green dye. *Campylobacter* was detected in the pond. *Campylobacter* was also detected in Bore 1, 2 days after the dye was introduced.
- The inquiry heard *E.coli* in the pond came from sheep faeces washed in by heavy rain from 3 nearby paddocks.

Appendices

Appendix 1 – Egg Production Standard Guide

Shed and Range	
Perching	15 cm per bird >30 cm between rungs >20 cm between perch and wall No more than 1m high between rungs
Water	<10 birds per nipple <120 birds per bell
Lighting	>8 hours per day <20 hours maximum per day
Air	Ammonia 25 mg/kg maximum = 25 ppm Target <20 mg/kg or 20ppm
Temperature	<33°C
Stocking Density (Shed)	12 birds/m^2 or 30 kg/m^2
Stocking Density (Range)	≤1 birds/m^2
Nesting Boxes	No more than 2 units high 1 single nest per 7 birds AND/OR 1 m^2 nest box area per 120 birds *Nesting calculations LxD=m2, m^2 x 120 = total birds per metre*
Manure	Shall not come into contact with the shed floor slats for the full life cycle of the flock (apart from as deposited by hens).
Pop holes	Minimum of 35 cm high, 40 cm wide and 2 m of pop hole per 1000 birds. *Pop hole calculations L x W – m^2*
Range access	By 26 weeks, notify relevant customers if no access for 72 hours
Ramps	Pop hole ranges over 2 m shall be more than 30° slope Ramps less than 2m shall be at >60°
Shelter and Shade	<30 m from the shed 25% of the flock OR 15 birds per m^2 (midday in Summer)

Barn Only	
Litter and Dust Bath	Ideally <250 cm^2 per bird
Winter Garden (if used)	Access during daylight hours from 24 weeks or 22 weeks if 90% of laying weight reached.

Appendix 2 – Calculation Guides and Assistance

Metric Measurements

Units of Length	
10 millimetres (mm)	= 1 centimetre (cm)
10 centimetres (cm)	= 1 decimetre (dm)/100 millimetres (mm)
10 decimetres (dm)	= 1 metre (m)/100 centimetres (cm)
10 metres (m)	= 1 decametre (dam)
10 decametres (dam)	= 1 hectometre (hm)/100 metres (m)
10 hectometres (hm)	= 1 kilometre (km)/1000 metres (m)
Units of Area	
100 square millimetres (mm^2)	= 1^2 centimetre (cm^2)
100 square centimetres (cm^2)	= 1^2 decimetre (dm^2)
100 square decimetres (dm^2)	= 1 metre (m^2)/10,000 (cm^2)
100 square metres (m^2)	= 1^2 decametre (dam^2)
10,000 square metres (m^2)	= 1^2 hectare (ha)

Converting linear perch space to metres square:

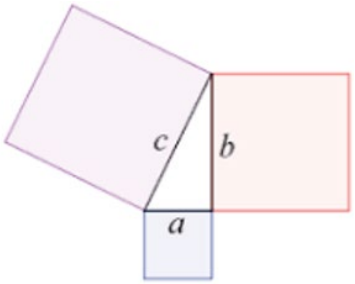
1. Total the combined length of perches in the shed as centimetres (A).
2. Work out the average perch width in centimetres (B).
3. Multiply total perch length by the average perch width (in centimetres).
4. This gives the cm^2 of perch area by 10,000 (D).
5. Divide the cm^2 of perch area by 10,000 (D)/10,000.
6. This gives the total m^2 of perch area (C).

A x B = D

D/10,000 = C (total perch area in m2).

Square Root Table

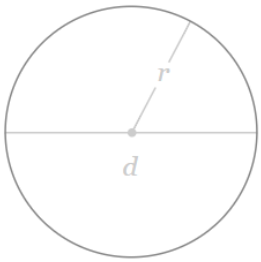
Number	Square Root	Number	Square Root
16	4.00	23	4.79
17	4.12	24	4.89
18	4.24	25	5.00
19	4.35	26	5.09
20	4.47	27	5.19
21	4.58	28	5.29
22	4.69	29	5.38



Triangles

$$c^2 = a^2 + b^2$$

$$area = \frac{(a \times b)}{2}$$



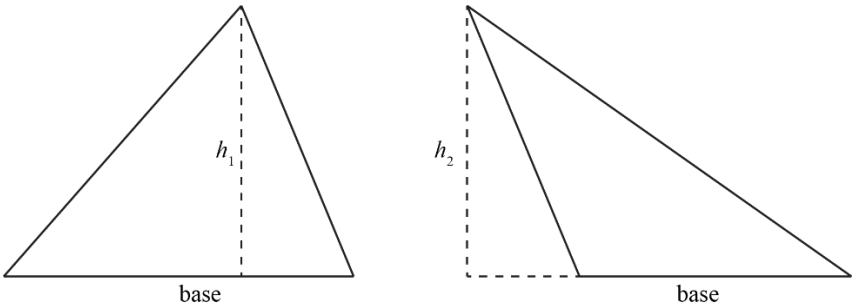
Circles

$$\pi = 3.142$$

$$r = radius$$

$$area = \pi r^2$$

$$diameter = 2\pi r$$



Non right angle triangles

$$where\ h = perpendicular\ height$$

$$area = \frac{base}{2} \times h$$

Appendix 3 – How to do a Risk Assessment

Risk assessments are a method where you identify risks to a system, location or a situation and categorise them at different levels depending on the frequency of occurrence and the likely outcome if the risk is present. Risk level can and should be reduced through specific actions or procedures to prevent the risk or mitigate its effect.

This example is assessing the ammonia risk in a shed and the associated monitoring frequency for each level of risk (applicable only for Level 1 and 2. Level 3 free range and barn farms are required to monitor ammonia levels on a daily basis).

Each farm needs to define their own definitions of terms used such as "excellent", "very good", "average", and "poor". You can have more or different terms, as long as you clearly define what each term means. You must consider your own environmental conditions and what each term can mean for your site.

For example, with ventilation:

Term	Definition
Excellent	Excellent airflow in all conditions in all parts of the shed
Very Good	Good airflow in most conditions – potential issues on wet and/or humid days with <5 k winds and not extending to all areas of the shed
Good	Good airflow through the shed on days with winds >10 k but known issues when no winds or known areas of the shed with poor ventilation
Average	No history of ammonia detections >25ppm
Poor	Historical testing records indicate ammonia detections in wet weather or >20% of samples in this shed.

For example, with drainage:

Term	Definition
Excellent	No pools of water ever observed after rain
Very Good	Minimal pools observed during rain but dissipates within 1-2 hours
Good	Some pools of water observed during rain but dissipates within 4-5 hours
Average	Pools of water form during rain and can persist up to 5 hours after rain
Poor	Water readily pools and persists after rain

		Ventilation				
		Excellent	Very Good	Good	Average	Poor
Drainage	Excellent	Negligible	Negligible	Low	Low	Moderate
	Very Good	Negligible	Low	Low	Moderate	Moderate
	Good	Low	Low	Moderate	Moderate	Significant
	Average	Low	Moderate	Moderate	Significant	Significant
	Poor	Moderate	Moderate	Significant	Significant	High

You will also need to consider any additional environmental factors (internal or external) and determine their rate of occurrence (how likely is it to happen?) and the severity (what are the consequences when the risk is present?) of their effects on ammonia levels. Then consider if there is an action to reduce the occurrence or reduce the severity of the risk. Consider consulting historical records to verify whether certain conditions have certain effects.

		Consequence				
		Insignificant	Minor	Moderate	Major	Severe
Likelihood	Remote	Negligible	Negligible	Low	Low	Significant
	Unlikely	Negligible	Low	Low	Significant	Significant
	Possible	Low	Low	Significant	Significant	High
	Likely	Low	Significant	Significant	High	High
	Almost Certain	Significant	Significant	High	High	Extreme

Your end "scoring" of the sheds will help you determine the appropriate monitoring frequency.

Scale of Risk	Management action required
Significant	Daily Monitoring required
High	Weekly Monitoring required
Moderate	Monthly monitoring required
Low	3 monthly monitoring required
Negligible	6 Monthly monitoring required

Consider a case study with Shed 3 of "Bantam's Farm Fresh Eggs". This is an older shed, built 10 years ago on old clay soils. The shed currently uses natural ventilation systems, but there is work scheduled to change the system to an automated tunnel system. Daily monitoring for the past year have shown that when there is high rainfall, ammonia levels come close to 25ppm. This shed houses a barn system with no litter.

Using the tables above, you determine initially that the ventilation is **good** and the drainage is **average** for Shed 3. Therefore in optimal conditions, the risk of high ammonia levels is **moderate**, meaning measuring should be conducted monthly.

Secondly you consider extra factors that may affect the ammonia levels. For this case, imagine that Shed 3 is situated in a valley with minimal wind and periods of high rainfall.

Periods of no wind are **possible**, and with the current ventilation system this could have a **major** effect on ammonia levels. Meaning when there is no wind, there is a **significant** risk with ammonia levels rising. This could mean in periods of no wind, you will need to instead monitor the ammonia levels **daily**. In this scenario, the risk is being proactively reduced by installing a new ventilation system to reduce the effects of no wind. Therefore, after the new system is installed, periods of no wind are still **possible** but the effects will be **negligible** and cumulative risk is **negligible** and you still continue with **monthly** testing of ammonia levels.

High rainfall occurs mainly in the autumn season, meaning its incidence is **almost certain** during autumn. With an older shed, there is the likelihood of general wear and tear on the roofs and minute holes/gaps being present. This could mean that high rainfall has a **major** effect on the risk rising ammonia levels. This puts the cumulative risk at **high**. Therefore, in high rainfall periods the risk is no longer moderate but instead **high to significant**. This means in these conditions you should monitor ammonia levels **weekly or daily**.

Therefore the final risk assessment score could look like:

Shed 1 – Free Range Optimal conditions – moderate risk, monitor monthly High rainfall – high risk, monitor weekly Shed 2 – Free Range Notes: currently not in use. **Shed 3 – Barn** **Optimal conditions – Moderate risk, monitor monthly** **High rainfall – High risk, monitor weekly** **No winds – Significant risk, monitor daily (valid until November 2019)** **Notes: Reassess risk of no winds when new ventilation systems are installed in November 2019**. Shed 4 – Barn Optimal conditions – low risk, monitor every 3 months High rainfall – low risk, monitor every 3 months Completed by C. Hickens 01/01/2019.

Records of risk assessment workings shall be maintained, along with any historical records used in determining occurrence or severity of risk.

Risk assessments for ammonia testing frequency needs to be reviewed at least annually. This might not mean you need to re-do the entire assessment but you need to assess whether the assessment is still appropriate for the conditions present at your sites.

Appendix 4 – Relevant Resources

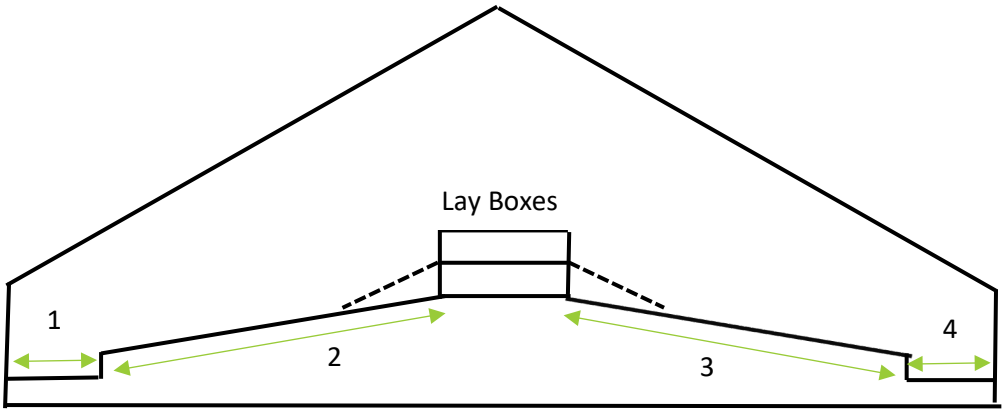
The following resources may be used to obtain further information and assist in the interpretation of this Standard:

Resource	Organisation	Location
Egg Standards of Australia for Rearing and Layer Farms (November 2018)	Australian Eggs Limited	https://www.australianeggs.org.au/for-farmers/
RSPCA Approved Farming Scheme Standards – Laying Hens 2009 + amendments	RSPCA Australia	www.rspca.org.au
RSPCA UK Welfare Standards for Laying Hens and Pullets 2008 + amendments	RSPCA UK	https://science.rspca.org.uk/sciencegroup/farmanimals/standards/pullets
Model Code of Practice for the Welfare of Animals – Domestic Poultry (4th Edition)	CSIRO	www.publish.csiro.au and search for document name
By State/Territory		
Prevention of Cruelty to Animals Act (1979) Prevention of Cruelty to Animals (General) Regulation (1996)	NSW Department of Primary Industries	www.austlii.edu.au and search for document name on the NSW link
Prevention of Cruelty to Animals Act (1986) Prevention of Cruelty to Animals Regulations (1997)	VIC Department of Primary Industries	www.austlii.edu.au and search for document name on the VIC link
Animal Care and Protection Act (2001) Animal Care and Protection Regulation (2002)	QLD Department of Primary Industries and Fisheries	www.legislation.qld.gov.au and search for document name.
Animal Welfare Act (2002) Animal Welfare Regulations (2003)	WA Department of Local Government and Regional Development	https://www.dlgc.wa.gov.au/Pages/default.aspx and search for document name.
Animal Welfare Act (1985) Prevention of Cruelty to Animals Regulations (2000)	SA Department of Environment and Heritage	www.legislation.sa.gov.au and search for document name.
Animal Welfare Act (2000) Animal Welfare Act (1999) Regulations (2003)	NT Department of Community, Development, Sport and Cultural Affairs	www.austlii.edu.au and search for document name on the NT link.
Animal Welfare Act (1993) Animal Welfare Regulations (1993)	TAS Department of Primary Industries and Fisheries	www.austlii.edu.au and search for document name on the TAS link
Animal Welfare Act (1992) Animal Welfare Regulations (2001)	Environment ACT	http://www.legislation.act.gov.au/ and search for document name.

Appendix 5 – Shed Measurements

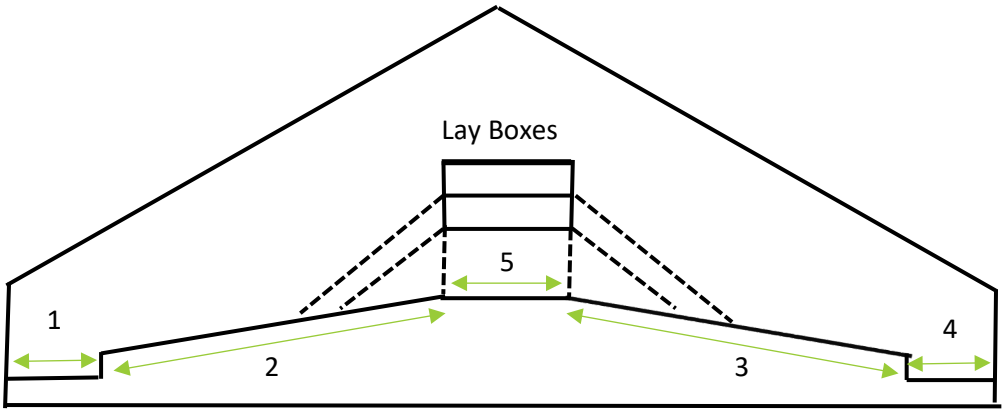
Example of internal shed areas suitable for free range and cage free systems:

Diagram 1:



Usable Area = Area 1 + Area 2 + Area 3 + Area 4

Diagram 2:



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Usable Area = Area 1 + Area 2 + Area 3 + Area 4 + Area 5

Where area 5 is a space with a height of 40cm made accessible to hens under the layer boxes.