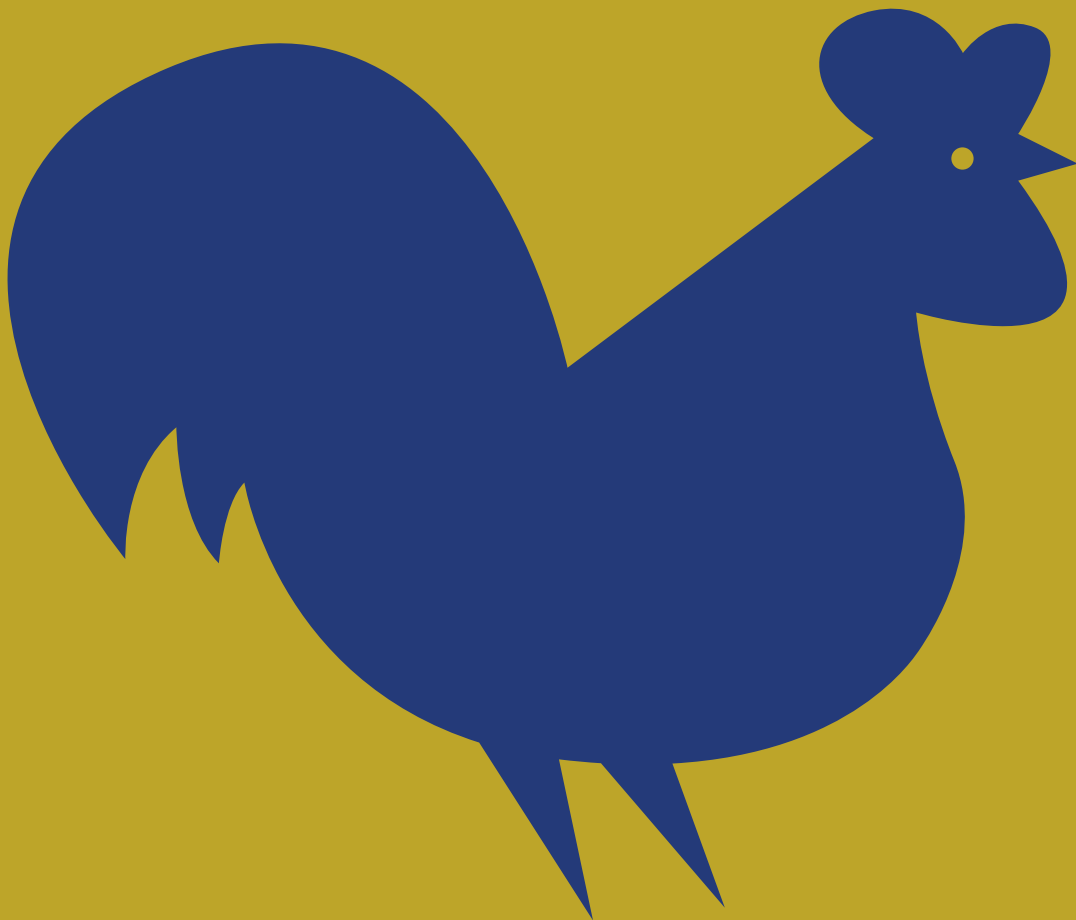


Guidance for the Welfare of Laying Hens and Pullets



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Preface

This guidance applies in relation to Scotland only. It is issued by the Scottish Ministers under section 38 of the Animal Health and Welfare (Scotland) Act 2006 with a view to securing the welfare of laying hens (including pullets and breeding birds) under all types of husbandry systems in Scotland. This guidance is intended to help all those who care for laying hens to ensure that their needs are met to the extent required by good practice.

This guidance in some areas goes beyond the legal minimum requirements for laying hen flocks of 350 birds or more. However, following the guidance may result in benefits such as: better health and welfare; assurance that the law is being followed ; and less frequent inspections by Scottish Government Poultry Officers (because they will be assured that you are applying good practice methods).

This guidance can also be considered within the context of the Farm Animal Welfare Committee's concept of quality of life for farm animals (see Annex 3). An animal's quality of life can be classified as a life not worth living, a life worth living, and a good life. This guidance is intended to help those responsible for laying hens to provide those hens with, as a minimum, a life worth living.

The Farm Animal Welfare Committee's 'Five Freedoms' form the guiding principles for the assessment of welfare within any system, together with the actions necessary to safeguard welfare within the constraints of an efficient livestock industry.

The Five Freedoms are:

- 1. Freedom from hunger and thirst** by ready access to fresh water and a diet to maintain full health and vigour;
- 2. Freedom from discomfort** by providing an appropriate environment including shelter and a comfortable resting area;
- 3. Freedom from pain, injury or disease** by prevention or rapid diagnosis and treatment;
- 4. Freedom to express normal behaviour** by providing sufficient space, proper facilities and company of the animals' own kind;
- 5. Freedom from fear and distress** by ensuring conditions and treatment to avoid mental suffering.

The Five Freedoms should be considered in conjunction with the Farm Animal Welfare Committee's three essentials of stockmanship:

1. Knowledge of Animal Husbandry

Sound knowledge of the biology and husbandry of farm animals, including how their needs may be best provided for in all circumstances.

2. Skills in Animal Husbandry

Demonstrable skills in observation, handling, care and treatment of animals, and problem detection and resolution.

3. Personal Qualities

Affinity and empathy with animals, dedication and patience.

Without good stockmanship, animal welfare can never be adequately protected.

Those who have care of laying hens should demonstrate:

- Caring and responsible planning and management;
- Skilled, knowledgeable and conscientious stockmanship;
- Knowledge of design of the birds' housed environment;
- Considerate handling and transport; and
- Knowledge of humane slaughter.

Legislative Background

A person can be responsible for a laying hen for the purposes of the Animal Health and Welfare (Scotland) Act 2006 ("the 2006 Act") and the Welfare of Farmed Animals (Scotland) Regulations 2010 on a permanent or temporary basis.

A person who is in charge of a laying hen will be a person who is responsible for it¹.

A person who owns a laying hen is always to be regarded as being a person who is responsible for it.

A person does not relinquish responsibility for a laying hen by reason only of abandoning it.

The Welfare of Farmed Animals (Scotland) Regulations 2010 places certain requirements on persons responsible for protected animals (as defined in the 2006 Act) including, for example, regulation 7. In the particular context of laying hens, this means that a person responsible for a laying hen must not attend to it unless that person is acquainted with, and has access to whilst so attending, any relevant guidance documents which are specified in the Regulations. Failure to do so is an offence under the Welfare of Farmed Animals (Scotland) Regulations 2010.

¹ Note also that a person ("person A") is to be regarded as responsible for a laying hen for which a person who is under 16 years of age, of whom person A has actual care and control, is responsible.

A person responsible for a laying hen must also take all reasonable steps to ensure that any person employed or engaged by that person does not attend to the hen unless the employee or engaged person—

- is acquainted with any relevant guidance documents which are specified in the Regulations, including those specified in regulations 7 and 7A;
- has access to a copy of those documents; and
- has received instruction and guidance on those documents.

Failure to do so is an offence under the Welfare of Farmed Animals (Scotland) Regulations 2010.

Activities carried out in accordance with this guidance may be regarded as good practice. This guidance may also be considered relevant by the courts in prosecution of offences including those under sections 19 (unnecessary suffering) and 24 (ensuring welfare of animals) of the 2006 Act. The relevance of the guidance to any prosecution will depend on the facts and circumstances and, in some cases, the guidance may not have any bearing on the prosecution.

Section 19 of the Animal Health and Welfare (Scotland) Act 2006 states that:

(1) A person commits an offence if—

(a) the person causes a protected animal unnecessary suffering by an act, and

(b) the person knew, or ought reasonably to have known, that the act would have caused the suffering or be likely to do so.

(2) A person who is responsible for an animal commits an offence if—

(a) the person causes the animal unnecessary suffering by an act or omission, and

(b) the person knew, or ought reasonably to have known, that the act or omission would have caused the suffering or be likely to do so.

(3) A person (“person A”) who is responsible for an animal commits an offence if—

(a) another person causes the animal unnecessary suffering by an act or omission, and

(b) person A—

(i) permits that to happen, or

(ii) fails to take such steps (whether by way of supervising the other person or otherwise) as are reasonable in the circumstances to prevent that happening.

(4) The considerations to which regard is to be had in determining, for the purposes of subsections (1) to (3), whether suffering is unnecessary include—

(a) whether the suffering could reasonably have been avoided or reduced,

(b) whether the conduct concerned was in compliance with any relevant enactment or any relevant provisions of a licence or code of practice issued under an enactment,

(c) whether the conduct concerned was for a legitimate purpose, for example—

(i) the purpose of benefiting the animal, or

(ii) the purpose of protecting a person, property or another animal,

(d) whether the suffering was proportionate to the purpose of the conduct concerned,

(e) whether the conduct concerned was in the circumstances that of a reasonably competent and humane person.

(5) This section does not apply to the destruction of an animal in an appropriate and humane manner.

Section 24 of the Animal Health and Welfare (Scotland) Act 2006 states that:

(1) A person commits an offence if the person does not take such steps as are reasonable in the circumstances to ensure that the needs of an animal for which the person is responsible are met to the extent required by good practice.

(2) The circumstances to which, for the purposes of subsection (1), regard is to be had include—

(a) any lawful purpose for which the animal is kept,

(b) any lawful activity undertaken in relation to the animal.

(3) For the purposes of subsection (1), an animal's needs include—

(a) its need for a suitable environment,

(b) its need for a suitable diet,

(c) its need to be able to exhibit normal behaviour patterns,

(d) any need it has to be housed with, or apart from, other animals,

(e) its need to be protected from suffering, injury and disease.

(4) This section does not apply to the destruction of an animal in an appropriate and humane manner.

The legal text in boxes throughout this document is not part of the guidance but highlights relevant legislation. Any emphasis in the legal text has been added and does not appear in the legislation. The text in these boxes is the law as it stands on the date that this guidance is published. (Please see the final page for the date of publication.) You should be aware that any of the legal requirements quoted here could change. You should check that these are an accurate statement of the law as it currently stands. See Annex 1 for a list of other relevant legislation.

A person commits an offence if they fail to comply with the requirements referred to in the boxes throughout this document. There may be other legislation and requirements that are not outlined in this guidance but with which you **must** be familiar and with which you must comply.

During on-farm welfare inspections, inspectors appointed under the 2006 Act will have regard to this guidance when assessing compliance against legislation. Those responsible for enforcement may also refer to the guidance when issuing advice, warning letters or care notices under the 2006 Act.

This guidance does not apply to anything which occurs by virtue of, or in accordance with, a provision of the Animals (Scientific Procedures) Act 1986. The Animals (Scientific Procedures) Act 1986 makes provision for the protection of animals used for experimental or other scientific purposes.

Suggested sources of additional information are included at the end of this guidance.

This guidance has been issued by the Scottish Ministers.

Introduction

1. This Guidance (which applies in Scotland only) covers all parts of the laying hen sector. It applies to any person who keeps any laying hen (including pullets and breeding birds) regardless of the number of hens kept. It therefore applies to commercial businesses, smallholders, crofters and individuals who keep a laying hen or hens as a hobby. These recommendations will help owners and keepers of laying hens comply with animal welfare legislation. However, they are not meant to replace expert advice such as from a veterinary surgeon or appropriately qualified technical advisor.

2. Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 lays down requirements regarding the conditions under which all farmed animals, including laying hens, are to be kept. **All persons responsible for laying hens must comply with those requirements.** Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 lays down additional conditions that apply to the keeping of 350 or more laying hens. These additional conditions do not apply to establishments with fewer than 350 laying hens, hatcheries, pullet rearing farms or laying hen breeders. The Council of Europe has also made recommendations concerning laying hens and, where these are not covered in legislation, they are included in this guidance.

3. The keeping of 350 or more laying hens per site in conventional (unenriched) cages has been banned in the UK on welfare grounds since 1 January 2012. For this reason, conventional cages are not recommended for small units (with fewer than 350 birds).

4. For ease of reference, the table on the following page summarises the various legal provisions relating to animal welfare on farm for different types of laying hen production systems. (The Welfare of Farmed Animals (Scotland) Regulations 2010 are referred to in the table as “WOFAR 2010”.)

5. The relevant animal welfare legislation applies to owners at all times as well as to any person looking after the hens on their behalf, wherever the hens are located. A written protocol should clearly set out for all parties their responsibilities in respect of welfare. However, the obligations imposed by the law will still apply.

6. No person should operate or set up a laying hen unit unless the welfare of all the birds can be safeguarded to comply fully with the law. This can be achieved by ensuring that the buildings and equipment, the skills and abilities, and the numbers of keepers are appropriate to the husbandry system and number of birds to be kept.

7. Keepers of **flocks of 50 or more birds must** register with the poultry register operated by APHA on behalf of the Scottish Ministers within one month of keeping this number of birds at the site. Keepers with fewer than 50 birds are actively encouraged to register. Paragraph 9 below explains the benefit of such registration. (See Annex 3 for information on registering poultry.)

Production System	Legislation in Scotland				
	Animal Health and Welfare (Scotland) Act 2006	WOFAR 2010 ² Schedule 1	WOFAR 2010 Schedule 3 Part 2	WOFAR 2010 Schedule 3 Part 4	WOFAR 2010 Schedule 3 Part 5
Hatcheries	✓	✓			
Pullets	✓	✓			
Holdings with fewer than 350 laying hens, including smallholdings	✓	✓			
350 or more laying hens in barn systems	✓	✓	✓		✓
350 or more laying hens in free range systems	✓	✓	✓		✓
350 or more laying hens in enriched cages	✓	✓	✓	✓	
Organically reared laying hens	✓	✓	✓		✓
Laying hen breeders	✓	✓			



Note in relation to holdings of fewer than 350 hens

8. Although not legal requirements for smaller flocks, the additional requirements that apply to holdings of 350 or more laying hens (such as those relating to nesting, perching, scratch areas and stocking density) are nevertheless still recommended as good practice in relation to smaller flocks of laying hens (and single laying hens). The recommendations in this guidance regarding enrichment provision, range access and reduction of the risk of injurious pecking are recommended as good practice for all holdings, regardless of size. Sections which have particular relevance for keepers of smaller flocks have been highlighted with a blue star throughout. (Hard copy and PDF only. Not available in HTML version.)



9. Remember that if you have 50 or more hens, the law states that you **must** register with the poultry register operated by APHA on behalf of the Scottish Ministers. But even if you have fewer birds, it's still a good idea to register. If you have registered, APHA will be able to contact you if there's a disease outbreak (such as bird flu) in your area, and you'll also help prevent the spread of disease and protect the national poultry flock.

² The Welfare of Farmed Animals (Scotland) Regulations 2010

Definitions

10. For the purposes of this Guidance, definitions of terms used in this Guidance are summarised below. Some of these (marked with an asterisk*) are taken directly from the relevant legislation, whilst others are included to provide an explanation for the purposes of the Guidance.

'aggressive pecking' is pecking directed towards the head and neck of another bird, and includes fighting, chasing and vocalisation. (Compare with 'injurious pecking', below);

'biosecurity' means a set of management actions and physical measures designed to reduce the risk of introduction, establishment and spread of disease to, from, and within the flock and, where relevant, between different flocks on site;

'flock' means a group of hens which are placed in a house of a holding and are present in this house at the same time;

'holding' means a production site on which laying hens are kept;

'house' means a building on a holding where a laying hen flock is kept;

'injurious pecking' is redirected foraging behaviour directed at the feathers and skin of other birds and encompasses feather pecking, vent pecking and cannibalism. (Compare with 'aggressive pecking', above);

'keeper' means any person responsible for or in charge of laying hens whether on a permanent or temporary basis;

'laying hen' (*) means a hen of the species *Gallus gallus* which has reached laying maturity and is kept for the production of eggs not intended for hatching;

'litter' (*) means, in relation to laying hens, any friable material provided in their accommodation enabling the hens to satisfy their ethological needs;

'mutilation' is a procedure which involves interference with the sensitive tissues or bone structure of an animal, otherwise than for the purpose of its medical treatment;

'nest' (*) means a separate space for egg laying, the floor component of which may not include wire mesh that can come into contact with the birds, for an individual hen or for a group of hens;

'owner' means any natural or legal person or persons owning animals;

'pullet' is used to describe birds during their rearing period and at transfer to the laying house when no eggs have been laid by the flock. As soon as the first egg has been laid in the flock it becomes a laying hen flock;

'red mites' are ectoparasites (up to 0.7mm diameter and grey or red in colour) that feed on the blood of birds;

'usable area' (*) means an area, other than a nesting area, used by laying hens which is at least 30cm wide with a floor slope not exceeding 14% and with headroom of at least 45cm.

Section 1: Recommendations applying to all husbandry systems

Stockmanship and staffing

All keepers of laying hens

Paragraph 1 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

1. Animals **must** be cared for by a sufficient number of staff who possess the appropriate ability, knowledge and professional competence.



11. Stockmanship is one of the most important influences on the welfare of laying hens. A good keeper will have a compassionate and humane attitude, will be able to anticipate and avoid many potential health and welfare problems and have the ability to identify those that do occur and respond to them promptly. Those responsible for managing a laying hen unit should make sure that the hens are cared for by well-motivated and competent staff. Before any unit is set up or expanded, it is important to be certain that the level of stockmanship will be sufficiently high to safeguard the welfare of the hens.

12. All staff and owners / keepers (where no staff are employed), including those contracted to carry out specific management tasks, need to be aware of the welfare needs and basic anatomy and biology of the hens, and should be trained in appropriate handling methods. To alleviate fear responses and possible injury, birds should be handled in a careful, positive and compassionate manner from an early age.

13. Staff and owners / keepers (where no staff are employed) need specific knowledge and skills. They **must** be trained and competent in any specific tasks they are required to undertake and be competent in the use of any equipment. In a farm situation, this should be developed on the unit by working with skilled staff who are experienced in the relevant system. Whilst under the supervision of others and before being given sole responsibility for animals, staff should have demonstrated competence and understanding, including on-farm practical ability, to ensure that they are capable of safeguarding the animals under all foreseeable conditions.

14. The knowledge and skills of all those responsible for laying hens - including those employed by contractors - should be reviewed and updated regularly. This may include on-the-job training and / or refresher courses (in-person or online) which, ideally, should lead to formal accredited recognition of competence.

15. Those working with hens should be able to recognise not only normal behaviour and good health and welfare, but also signs of stress, distress, poor quality of life, illness or disease and should know how to seek veterinary advice. See also paragraphs 43 to 55. Where specialised tasks are to be performed, for example, medication or humane culling, specific training should be given and records kept of those staff competent to carry out those tasks. Alternatively, the services of a contractor using competent trained staff should be obtained.

16. It is essential to ensure enough time is available within the daily work routine to inspect the hens properly and any installations essential for their health and welfare and for any remedial action to be taken promptly. The owner / keeper should have adequate knowledge of the husbandry system to be able to appreciate the suitability of the total environment for the birds' health and welfare.

17. Any birds bred for farming purposes should not be used for other purposes, including public spectacles or demonstrations, if such use is likely to be detrimental to their health or welfare.

Health and welfare plan

18. A health and welfare plan should be implemented for each farm, and should set out health and husbandry activities covering the whole of the production cycle. Routine daily tasks and other regular checks essential for bird health and welfare should be clearly detailed. The plan should be developed with appropriate veterinary advice, regularly reviewed against performance and updated regularly, at the end of the flock or annually on a multi-age site. Smallholders, crofters and backyard keepers should also have a plan setting out all the health and husbandry activities required for their flock, although this is likely to be considerably less detailed than that required for larger producers. ★

19. The health and welfare plan should also establish management procedures and control measures to reduce the risk of infections and injury and include an effective vaccination programme. Antibiotics **must not** be used routinely, but only for treatment purposes as prescribed by a veterinary surgeon when specific disease or infection has been diagnosed, to avoid a welfare issue.

20. The plan should include contingency measures to account for both endemic and potential notifiable disease. See also paragraphs 38 to 42. The plan should also include the use of welfare outcome assessments to assess and monitor the ongoing welfare of the hens. See also paragraphs 56 to 59.

21. There are many sources of technical advice available to owners / keepers, in addition to advice from their veterinary surgeon. They may also receive regular inspections from independent assurance schemes as part of their retailer supply contract and from government regulators. Social media is largely unregulated and therefore may not be a reliable source of information. Advice should always be verified by a veterinary surgeon, appropriately qualified technical advisor or a Scottish Government Poultry Officer.

22. As part of the health and welfare plan, owners / keepers should establish in advance the best course of action to take should problems be identified and ensure that veterinary or other expert advice is sought when needed.

23. Smallholders, crofters or individuals with a backyard flock, smaller numbers of birds or even a single laying hen are strongly encouraged to register with the poultry register operated by APHA on behalf of the Scottish Ministers. Registration is of benefit to such keepers because it will help them keep up to date with important ★

information relevant to the hens (or hen) they keep. Registration also benefits poultry health and welfare more widely by building a picture of, and feeding back on, information on disease patterns and the health and welfare landscape. See also paragraph 37.

Biosecurity and disease control



24. The provision quoted below applies to holdings on which 350 or more laying hens are held. However, biosecurity applies to flocks of any size, from smallholdings and crofts with one or two birds to commercial farm units. The recommendations given below are particularly relevant to larger flocks, but the general principles apply to flocks of any size.

Holdings of 350 or more laying hens

Paragraph 5 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

5. (1) Those parts of buildings, equipment or utensils which are in contact with the hens **must** be thoroughly cleaned and disinfected regularly and, in any case, every time depopulation is carried out and before a new batch of hens is brought in.

(2) While the cages are occupied—

(a) the surfaces and all equipment **must** be kept satisfactorily clean;

(b) droppings **must** be removed as often as necessary to prevent cross-infection and the build-up of disease carrying organisms; and

(c) dead hens **must** be removed every day.

25. Good biosecurity measures should result in:

- a) farm units / smallholdings / crofts being more secure from the introduction of infectious diseases;
- b) the spread of any diseases within the unit, specifically from flock to flock, being kept to a minimum; and
- c) a reduced risk of spread of disease from the farm to other farms or elsewhere.

26. Good biosecurity can be achieved through:

- a) limiting external vehicle or equipment movement onto farm and instigating appropriate cleansing and disinfection procedures where this occurs;
- b) good management and husbandry procedures on site. These include:

- i. where possible, “all in - all out” management of sites, by site or by accommodation block. Having all houses empty at the same time facilitates effective cleaning, disinfection, parasite and pest control, and will also act to provide a disease break;
 - ii. clear biosecurity protocols when moving between different flocks on site, particularly clothing and footwear where the site has different aged flocks;
 - iii. clearly signposted disinfection points on entry and exit from each accommodation or rearing section;
 - iv. separating staff responsibilities to specific sections and / or following strict disinfection protocols between different aged flocks; and
 - v. daily management routines which start with the housing containing the youngest birds and progress through to the housing with the oldest birds.
- c) good hygiene throughout the site, including protocols in the health and welfare plan for staff hygiene, and cleansing and disinfection procedures when moving between flocks and other accommodation:
- i. preventive disease control programmes, including vaccination and red mite management programmes;
 - ii. a pest control programme to limit access of rodents, wild birds, wildlife, domestic pets and other risks, to animals and feed stores; and
 - iii. familiarising birds with changes in routine by careful and gradual introduction of new procedures – for example, changes in lighting - whilst limiting avoidable stressful events or conditions to which birds are exposed.

27. One way by which notifiable avian disease may spread to poultry is through contact with infected wild birds. It is not possible to prevent all risk of airborne infections from entering a unit but, when planning new sites, consideration should be given to providing the maximum possible distance between the proposed site and existing sites as well as areas where migrating wild birds congregate, to improve biosecurity. A useful guide is the 3 km distance that defines the radius of a Protection Zone in the control of notifiable diseases, such as highly pathogenic avian influenza. The distance between houses on a site should also be considered. Ponds on site should be avoided but, where this is not possible, the hens should not be able to access them. Similarly, wild birds congregating on ponds, or otherwise, should not be able to access the hens’ feed and water, nor nest and roost in poultry buildings. A vermin control system should be in place to limit rodents and pests accessing and contaminating feed.

28. Only essential visitors should be allowed onto the unit. All visitors, including inspectors and catchers, should comply with the required biosecurity as stipulated by the owner / keeper (and which may be subject to change under changing disease challenges), including personal / private bird contact. Visitors should follow strict

disinfection procedures and wear unit-dedicated clothing and footwear. A visitor book should be provided and all visitors should sign to say they have not been near other poultry for an agreed period, as stipulated in the health and welfare plan. A system should be provided to alert staff or visitors at the gate of these requirements before they enter the site. Consideration should be given as to the need for visitors to enter bird space.

29. Ideally, farm staff should not keep their own birds at home; indeed, employment on a farm may be subject to staff agreeing not to keep birds at home. In cases where staff are permitted to keep birds at home, they should be extra vigilant for signs of disease and even more careful about biosecurity both at home and on the farm.

30. Where possible, waterfowl (i.e. geese and ducks) should be kept separate from other poultry species.

31. Loading facilities and, where possible, feed bins and dead stock collection points should be sited at the biosecurity area perimeter. Spilt feed should be cleaned up immediately to avoid attracting wild birds. If used, isolation buildings for new stock should be as near as possible to the farm entrance and away from other buildings / ranges for disease monitoring to take place. Vehicles which visit other poultry units should be kept off the unit wherever possible but, where entry is essential, wheels and footwear should be cleansed and disinfected thoroughly on entry and exit. Anything unloaded from vehicles onto the unit should also be thoroughly cleansed.

32. Once emptied, bird housing should be thoroughly cleaned to remove organic material; where appropriate, washed with detergent; and then disinfected. Used litter needs to be removed from the house and the site before re-stocking to reduce the risk of carry-over of disease.

33. Owners / keepers should routinely use local and national surveillance information sources for the latest information on disease diagnoses in the area.

34. All owners / keepers should be familiar with the signs and symptoms associated with notifiable diseases which affect laying hens, including avian influenza and Newcastle disease. An owner / keeper who knows or suspects that any bird or carcass from a flock may have a notifiable disease, has a **legal duty to report** this immediately to APHA.

35. All laying hen flocks of 350 or more hens are monitored under the National Control Programme for Salmonella, under which there are additional legal obligations. See 'Annex 1: Legislation affecting laying hens and pullets' for further information on legal obligations.

36. Where notifiable disease is confirmed in birds on the farm / smallholding / croft or other units there will be mandatory biosecurity measures and restrictions on movements which could persist for a considerable length of time and there may be a requirement to confine free range birds to their housing. See the following section on contingency planning for further information. ★

37. Keepers who have registered with the poultry register operated by APHA will be contacted by them by email or text message in the event of a disease outbreak. Keepers who have not registered should seek information from the Defra / APHA disease control website and should sign up to receive APHA disease alerts. ★

Contingency planning for disease and other emergencies

38. An assessment of possible hazards should be carried out, and achievable contingency plans put in place to respond to potential scenarios and, as far as practicable, to remove the birds to a safe place if necessary. All owners / keepers should ensure they, or at least one responsible member of staff, are always on call to take the necessary steps.

39. The Scottish Government website provides further information on contingency planning. (See Annex 3.) Emergency plans should deal with events such as:

- a) the disruption of feed, power or water supply, including when automated equipment fails and cannot be immediately rectified;
- b) heat stress;
- c) natural disasters, such as floods;
- d) fires;
- e) arrangements for allowing rapid entry to locked buildings in case of emergency, for example, by providing clear instructions on emergency contact details;
- f) instructions for short and long term restrictions placed in case of notifiable disease, including dealing with delays in moving birds to slaughter and the compulsory temporary housing of free range birds; and
- g) arrangements for both culling and disposal of flocks, when depopulation is required in the event of notifiable disease or due to contamination of feed or pasture with toxins.

40. Consideration should be given to the use of 24/7 active alarm systems, which allow prompt emergency warning of staff located on site or on duty remotely. Portable lighting such as a head torch should be available for emergency night time inspections.

41. Where long term housing of normally free range hens is anticipated, consideration should be given to the provision of additional littered flooring, ample enrichment and access to natural daylight within the confined housing, to avoid an increase in injurious pecking in birds that are normally accustomed to range access. A covered extension or shelter attached to the main accommodation could meet these additional requirements, although this area should not be included in the house measurements for stocking density calculations. ★

42. During any periods of enforced restrictions on movement or any other emergency on farm, animal welfare remains the responsibility of the owner / keeper. Any concerns about animal welfare during such periods should be discussed with a veterinary surgeon and, where appropriate, reported to APHA if animal welfare conditions deteriorate.



Inspection and responding to poor health and welfare

All keepers of laying hens

Paragraphs 2(1) and (2) of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

2. (1) Animals kept in husbandry systems in which their welfare depends on frequent human attention **must** be adequately inspected at least once a day to check that they are in a state of well-being.

(2) Animals kept in systems other than husbandry systems in which their welfare depends on frequent human attention **must** be inspected at intervals sufficient to avoid any suffering.



All keepers of laying hens

Paragraph 3 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

3. Where animals are kept in a building, adequate lighting (whether fixed or portable) **must** be available to enable them to be adequately inspected at any time.



Holdings of 350 or more laying hens

Paragraph 2 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

2. All hens **must** be inspected by the person responsible for the hens at least once a day.

Holdings of 350 or more laying hens

Paragraph 7 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

7. Accommodation comprising 2 or more tiers of cages **must** have devices, or appropriate measures **must** be taken, to allow inspection of all tiers and removal of hens without difficulty.

All keepers of laying hens

Paragraphs 5 and 6 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

5. Any animals which appear to be ill or injured—

(a) **must** be cared for appropriately without delay; and

(b) where they do not respond to such care, veterinary advice **must** be obtained as soon as reasonably practicable.

6. Where necessary, sick or injured animals **must** be isolated in suitable accommodation with, where appropriate, dry comfortable bedding.

43. A thorough flock inspection must take place at **least once a day**, irrespective of the presence of any automatic surveillance system. Ideally, there should be three inspections spread out across the day. Even when linked with other visits to the poultry houses, each health and welfare inspection should be undertaken as a separate, specific procedure.

44. Inspections should be sufficiently thorough to detect illness and injury of individual hens, and should include an inspection of nest boxes where hens in poor health may seek refuge. Aspects of the physical environment such as litter condition and air quality should also be monitored and problems rectified without delay.

45. Owners / keepers should try to introduce some variation into the inspection routine, including different members of staff and different clothing where possible, to help reduce fearfulness and stress associated with any necessary changes in management during the rearing and laying periods. Frequent inspection helps familiarise hens to human presence in the house as a normal part of daily life.

46. Housing and equipment **must** allow all the laying hens to be seen clearly. Light intensity during inspection **must** be sufficient to ensure that the birds are clearly visible. See also paragraph 40.

47. Flock inspection should include an assessment of body condition, any growth variation within the flock, respiration, mortality, condition of plumage, indications of head or vent pecking, condition of droppings, eyes, skin, beak, legs, feet and claws, and, where appropriate, combs and wattles. Attention should be paid to the presence of external parasites, feed and water consumption and egg production level. The healthy individual hen should vocalise and perform activities appropriate to its age, breed or type, it should have clear bright eyes, good posture, clean healthy skin, good feather condition and coverage, well-formed legs and feet, effective walking and active feeding and drinking behaviour.

48. In non-cage systems, all birds should move away from you with gentle encouragement during inspection. Inspecting hens in nest boxes early on in the

daylight period should generally be avoided to prevent disturbance, but nest boxes should be thoroughly inspected at least daily as sick or bullied birds may hide there.

49. Inspections should be made at every level of multi-tier and enriched cage systems. In order to ensure a thorough inspection, the owner / keeper should pass close enough to every bird to encourage them to move, taking care not to frighten them with sudden, unaccustomed movement, noise or changes in light levels. This will enable the identification of any individual that is sick, injured or weak for appropriate action to be taken by the owner / keeper. Individual examination should occur where inspection suggests animal health or welfare is compromised and may require prompt intervention, including humane culling.

50. The early signs of ill-health may include changes in food and water intake, preening, vocalisation and flock activity levels. There may also be a drop in egg production and changes in egg quality, such as shell defects. Any variation in normal feeding, drinking or behaviour may indicate a problem which should be given immediate attention, in order to identify the birds affected and the cause, and to rectify any emerging issue that is of risk to the health and welfare of the flock or any individual bird within it.

51. The owner / keeper should be able to anticipate problems or recognise them in their earliest stages and, in many cases, be able to identify the cause and rectify the problem immediately. Recording all incidents suggesting a health or welfare concern, in addition to minimum legal records requirements on mortality and medicines, may help in this. Such monitoring should be included in the health and welfare plan, so all staff are clear on specific measures to be made on a daily basis or at the time of specific management procedures. Advice should be sought, where appropriate. See also welfare outcome assessments at paragraphs 56 to 59.

52. The possibility that the birds may be affected by a notifiable disease should be considered and all owners / keepers and staff should be aware of risks and clinical signs associated with new and emerging diseases. See also paragraphs 33 to 37. If the cause is not obvious, or if the immediate action taken is not effective, a veterinary surgeon's advice **must** be sought immediately; failure to do so may cause unnecessary suffering in the individual and / or in other hens subsequently affected by lack of prompt action.

53. Hens that are injured, exhibiting prolapse or showing other signs of illness, or showing signs of having been bullied, and so are likely to suffer, must receive appropriate treatment without delay. Depending on the circumstances, this may require separation from the rest of the flock to allow treatment, rest and recuperation, or birds may need to be humanely culled immediately. Where there are signs of recurring injuries – either across the flock or to individual birds - which may be related to the environment, these **must** be investigated and the cause rectified as soon as possible.

54. Dead birds seen during an inspection should be removed from the house without delay and disposed of appropriately. However, routinely finding dead birds, or finding birds that have been dead a long time, is a strong indicator that inspections are not sufficiently thorough. This is because sick or injured birds should be

identified prior to dying, and treated or culled to reduce suffering. In these cases, inspections should be improved or increased in frequency.

55. When any bird is culled this **must** be carried out using a permitted method in accordance with the relevant legislation and the method included in the health and welfare plan. See Annex 3 for links to advice on humane culling.

Welfare outcome assessments

56. Many recognised welfare standards are based on “inputs” carried out by the owner / keeper and staff. These include daily management and husbandry procedures, or resources provided to the animals such as housing, feed and water. Many of these are defined as minimum standards in law and are covered throughout this Guidance.

57. The use of welfare outcomes can help the owner / keeper understand how these inputs directly affect individual birds and the flock as a whole. The assessments are designed to be practical and measurable, whilst having a scientific basis to demonstrate positive or negative welfare states in the birds.

58. In commercial systems the routine welfare outcome assessments to be carried out by the owner / keeper and staff should be discussed with your veterinary surgeon / Scottish Government Poultry Officer as part of the welfare plan, and appropriate action taken. Additional requirements may be specified through private schemes or retailer contracts. All agreed measures should be accurately detailed and recorded on a regular basis, according to the relative rate at which an outcome is likely to change. Additional information from other rearing stages (for example, hatchery information and pullet rearing data) and from slaughterhouses at depopulation may provide further information on the health and welfare of the flocks.

59. Recommended welfare outcome assessments in laying hens include:

- a) Feather loss
- b) Bird dirtiness (although some ‘dirtiness’ might simply be the result of dustbathing – see paragraph 93)
- c) Antagonistic behaviours, including injurious and aggressive pecking
- d) Flightiness or fearfulness
- e) Number of birds requiring isolation / additional care
- f) Mortality
- g) Lameness / foot condition / claw length
- h) Scabbing and scarring on the comb or wattles.

Specific health and welfare issues

Injurious pecking, aggressive pecking and feather loss



60. A key positive outcome for the flock is absence of injurious pecking. Most commercial keepers currently have their chicks' beaks trimmed by infra-red beak treatment (IRBT) in order to avoid injuries from injurious pecking. However, every effort should be made to reduce injurious pecking so as to stop the need to beak trim as soon as reasonably possible. (See also section on beak trimming, at paragraphs 120 to 128.) However, beak trimming should not be ceased until the owner / keeper is confident that, under the current bird rearing, housing and management procedures, this will not result in significantly increased risk of injurious pecking.

61. Any sudden change in management or environment, or outbreak of disease or infestation (for example, red mite), i.e. a stressor, can precipitate an outbreak of injurious pecking. This includes gentle pecking (feather tip pecks, little reaction from the bird being pecked) through to severe feather pecking (forceful pecks, feather pulls, visible feather loss to back, vent, tail area, bleeding of the comb or wattles, the bird being pecked may vocalise) and cannibalistic pecking (pecking of featherless skin following severe feather pecking leading to blood loss, infection, death). Vent pecking is a specific form of cannibalistic pecking that targets the vent area and can lead to the inner organs being pulled out; it can occur in fully feathered birds and a key risk time is onset of egg-laying.

62. Aggressive pecking is not the same as injurious pecking. It occurs as part of natural behaviour to establish dominance hierarchies or "pecking orders" within the flock and as a result of competition for resources. Vocalisation between birds during aggressive activity is common. The motivations for aggressive pecking are different to injurious pecking and may also be seen when management changes are made, so it is important that the owner / keeper takes time to observe the birds to understand the type of pecking occurring in the flock. If aggression levels are particularly high in a flock this can lead to injurious pecking and cannibalism, so it is recommended that action is taken before this occurs. Possible remedies include removing aggressive birds, decreasing stocking density, or increasing access to resources.

63. Owners / keepers should, as far as practicable, choose strains with a reduced tendency to injurious pecking.

64. A bespoke action plan to reduce injurious pecking and thus the need for beak trimming should form part of any health and welfare plan. This should be drawn up in consultation with a veterinary surgeon. It should detail specific management procedures and interventions from early rearing through to laying, to reduce the risk of injurious pecking occurring and the steps to be taken in the event of an outbreak. Feather scores should be recorded throughout flock life (See Annex 3 for advice on feather scoring). Outbreaks of injurious pecking should be recorded, along with the results of investigation as to possible causes and the steps taken to deal with the problem. Progress should be assessed on a flock by flock basis as part of the review of the plan, with the aim of continuous improvement.

65. Recommended strategies and interventions include:

- a) Managing the transition from rearing to laying house by matching conditions as far as possible. This is a high risk period for stress and the onset of feather pecking behaviour and the transition should be kept as smooth as possible. See also 'Section 2: Recommendations applying to day-old chicks and pullet rearing';
- b) Allowing the pullets immediate access to good quality, friable litter;
- c) For free range, giving the pullets in the laying unit early access to the range;
- d) Encouraging use of the range by providing shelters near the house; increasing the amount and variety of vegetation; and providing foraging opportunities and appropriate outside drinkers – while taking steps to avoid access to wild birds and vermin - see also paragraphs 183 to 185;
- e) Actively managing the range by keeping the area around the popholes clean and well drained, controlling predators and rotating pasture;
- f) Maintaining good, deep, friable litter throughout the laying period to promote foraging and dustbathing activities;
- g) Providing additional opportunities for foraging and dustbathing, such as straw or hay bales (entire and unwrapped to allow birds to pull them apart) or in hanging nets; scattering feed or grain into litter; running scratch feeders frequently; a range of pecking objects, such as pecking boards, ropes, vegetables hung up on string (destructible pecking objects are particularly good at maintaining birds' interest); and dustbathing boxes;
- h) Minimising diet changes – where possible, mix old and new diets through any transition period. Avoid changing from high protein to low protein diets. Mash diets in some flocks can help as they increase eating time compared to pellets and keep the birds occupied;
- i) Increasing insoluble fibre in diet – within the main diet or as an added forage, such as whole oats, wheat, corn, alfalfa, maize / barley / pea silage or carrots. However, ensure that methods of additional forage provision do not attract rodents;
- j) Managing health and hygiene and maintaining effective disease control, for example, monitoring and controlling levels of red mite and worm burdens;
- k) Reducing stress in the flock by developing good human-animal relationships, carrying out regular inspections and avoiding large contrasts in light, noise and temperature;
- l) Inspecting birds more regularly than usual following any unusual or sudden change in management that is likely to increase stress levels, in order to detect any injurious pecking at the earliest opportunity, enabling steps to be taken to treat or cull injured birds;

- m) Consider introducing additional perching opportunities in the vertical space in the building, placed high enough to avoid vent pecking. Providing additional resting / roosting options, appropriate for that shed, can allow submissive birds to avoid situations in which they might otherwise be pecked; and
- n) Consider the provision of covered open-air extensions – see also paragraph 41. The natural lighting and extra space, as well as opportunities for further enrichment points, all help maintain bird welfare (although this area should not be included in the house measurements for stocking density calculations).

66. Low light intensities are sometimes used as a strategy to control feather pecking. Low light intensity or using specific wavelengths of light (eg red) can negatively affect eye development and basal corticosterone levels (an indicator of stress). Low light intensities are not recommended as a routine management practice and so should be used with caution and only on a short term basis. If this method is used, light intensity should be increased during bird inspections. See also paragraphs 88-91 regarding light levels.

67. Once all management strategies are in place and good feather cover is achieved throughout lay for at least two consecutive flocks, stopping beak trimming in future flocks should be actively considered, in consultation with a veterinary surgeon and other appropriately qualified technical advisors.

Skeletal health

68. Skeletal health is an important aspect of the welfare of laying hens. Fractures can be a cause of pain and therefore poor welfare. They can occur during rearing or laying or during depopulation, transport or at the slaughterhouse.

69. The incidence of fractures is determined mainly by:

- a) the weakness of bones, including the susceptibility of keel bones to damage before and after ossification;
- b) the design of housing systems, during rearing and in lay, including space availability and enrichment provision (to improve bone health through load-bearing exercise) and housing layout (optimised to reduce trauma caused by collisions with furniture and equipment);
- c) handling, including at depopulation; and
- d) diet.

70. The keel bone (or sternum) is initially made of cartilage, and this ossifies (turns to bone) at about 35 weeks of age. At any stage of production, it may become twisted or otherwise deformed. It may be damaged or broken, for example, when the hen jumps or flies and collides with a perch or other equipment in the poultry house, but may also occur in birds in enriched cages with limited capacity to jump or fly.

Whilst bone strength alone may not be the sole cause of keel bone fracture, there is sufficient evidence that it is a major factor.

71. Suitable diet, housing design and careful handling contribute to optimising bone strength and reducing fracture risks. Owners / keepers of pullets and laying hens should follow the latest guidance on appropriate nutritional content of feed at different stages of rearing and laying to optimise bone strength throughout the bird's life. The calcium carbonate in the egg shell produced by the hen is made available either from the daily feed supplied or from the calcium in the hen's bones, or a combination of both, so a calcium-rich diet is beneficial for skeletal health. Load-bearing exercises provided by the ability to dustbathe and access perches (ideally from the early rearing period) encourage mobility and should improve bone strength. The hen will also benefit from walking, hopping, wing flapping and other exercise. Design and location of perches, tiers and ramps should be carefully considered in both pullet and laying houses to prevent collisions and falls.

72. If birds are detected with serious injuries on farm, they **must** be isolated where necessary and treated or culled promptly by a trained and competent person in accordance with the specific welfare at the time of killing legislation. Birds which are not considered fit for transport should be immediately culled on farm. See Annex 3 for advice on humane culling. ★

73. Owners / keepers should encourage end-of-lay hen processors to feedback information on fractures (e.g. the number and type of fractures) which should then be used to set targets in the health and welfare plan, to reduce the incidence of fractures. Any changes in housing design, management, nutrition or catching and handling strategies at depopulation should be detailed in the plan, before the next flock of replacement pullets arrives.

Red mites

74. Red mites in low numbers cause irritation, making birds restless and prone to injurious pecking. Large numbers of mites can cause anaemia, pale comb and wattles, reduced egg production and progressive weakness until death. Younger birds and chicks are particularly susceptible to rapid anaemia and death. The red mite lifecycle from egg to adult can be as little as a week and once there is an infestation in the flock it can be difficult to bring under control.

75. A clear monitoring protocol should be discussed with your veterinary surgeon and included in the health and welfare plan. This should be routinely carried out and records kept. Equipment and furnishings should be checked for mites; mite traps can be placed in the house in key areas to monitor levels. The comb, leg and breast skin of birds, including any found dead, should also be checked. A visible clumping of mites or blood spotting of eggs denotes a severe infestation. Treatment options should be discussed with your veterinary surgeon, implemented as agreed and records kept. See also paragraphs 129 to 134.

Automatic or mechanical equipment

All keepers of laying hens

Paragraphs 18 to 21 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

18. All automated or mechanical equipment essential for the health and well-being of the animals **must** be inspected at least once a day to check that there is no defect in it.

19. Where any defect in automated or mechanical equipment of the type specified in paragraph 18 is discovered, it **must** be rectified immediately, or if that is impossible, appropriate steps **must** be taken to safeguard the health and well-being of the animals pending the rectification of such defects including the use of alternative methods of feeding and watering and methods of providing and maintaining a satisfactory environment.

20. Where the health and well-being of animals is dependent on an artificial ventilation system—

(a) provision **must** be made for an appropriate back-up system to guarantee sufficient air renewal to preserve the health and well-being of the animals in the event of failure of the system; and

(b) an alarm system (which will operate even if the principal electricity supply to it has failed) **must** be provided to give warning of any failure of the system.

21. The back-up system referred to in paragraph 20(a) **must** be thoroughly inspected, and the alarm system referred to in paragraph 20(b) tested, in each case not less than once every 7 days in order to check that there is no defect in it, and, if any defect is found in such system or alarm (whether or not on it being inspected or tested in accordance with this paragraph), it **must** be rectified forthwith.

76. All equipment and services should be cleaned, inspected and tested regularly, and kept in good, clean working order. This includes feed hoppers, feed chain and delivery systems, drinkers, ventilating fans, heating and lighting units, fire extinguishers, generators, other energy backup systems and alarm systems.

77. All automated equipment upon which the birds' welfare is dependent should incorporate a failsafe or standby device and an alarm system to warn the owner / keeper of failure. Defects **must** be rectified immediately or other temporary measures taken (as described in the health and welfare plan) to safeguard the health and welfare of the birds until the problem has been rectified. Alternative ways of feeding and watering and of maintaining a satisfactory environment should therefore be ready for immediate use.

78. Ventilation, heating, lighting, feeding, drinker lines and all other equipment or electrical installation should be designed, sited and installed so as to avoid risk of injuring the birds. All electrical installations at mains voltage should be inaccessible to the birds and properly earthed.

Ventilation and temperature

All keepers of laying hens

Paragraph 13 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

13. Air circulation, dust levels, temperature, relative air humidity and gas concentrations **must** be kept within limits which are not harmful to the animals.

79. Environmental factors (temperature, humidity, ammonia, carbon dioxide, dust, bacteria and fungi) can directly impact on bird welfare, feed conversion, egg production (numbers, weight, shell quality), disease and mortality. The following table shows recommended values for some environmental parameters. These should be monitored throughout the accommodation, paying particular attention to where the flock spends most of its time. In houses where birds can access higher levels, then monitoring should take place at these levels too.

80. Outdoor environmental conditions will influence house temperature and humidity, so these values may at times not be possible, but should be regarded as ideal. In free range systems, it may be necessary to restrict the numbers of open popholes in bad weather, in order to maintain house temperature and humidity levels, although this should be discussed with your Scottish Government Poultry Officer. See paragraphs 194-195.

House temperature	17 - 25°C (adult layers) depending on system of production
Humidity	40 - 60% (up to 70 - 75% for short periods)
Light intensity	At least 10 lux (except nest boxes - less than 1 lux)
Ammonia concentration	less than 20 ppm
Carbon dioxide	less than 3000 ppm

81. The ventilation system and facilities for storing and handling litter and manure should be designed, maintained and managed to prevent the exposure of birds to gases such as ammonia and carbon dioxide, in concentrations which cause discomfort to the birds or which are detrimental to their health. People vary in their ability to smell ammonia; however, if ammonia can be smelt, it is likely to be too high and suggests monitoring and action is required. Certain activities (for example, topping up litter and manure removal) within the layer house can increase dust and

pathogen levels and clear protocols should be in place to reduce frequency of exposure to birds and staff to elevated levels.

82. Provision of insulation and ventilation should be designed to avoid heat and cold stress. Ventilation requirements should be detailed in the health and welfare plan. Clear guidance should be provided for staff on actions, including monitoring, at different times of the year to help maintain appropriate temperatures and humidity in the housing. Where ventilation appears to be causing health and welfare issues, expert advice should be sought. ★

83. Particular care should be taken to protect hens vulnerable to cold stress - such as those with feather loss - from draughts in cold conditions. Visible evidence of cold stress in the housing environment is huddling of groups of birds together for prolonged periods, in the warmest areas of the house (or the cage). Huddling is a normal response to cold temperatures but prolonged huddling indicates the temperature is not comfortable in the long term for the flock. ★

84. Laying hens towards the end of lay are more likely to suffer cold stress, particularly if they have high feather loss in cold, wet weather conditions. End-of-lay hens' fitness to transport for the intended journey should be considered carefully when feather loss is high and body condition is poor during cold wet weather, particularly when a recent increase in flock mortality beyond the expected levels has occurred.

85. Birds should not be exposed to persistently strong, direct sunlight or hot, humid conditions which can cause heat stress. Heat stress is indicated by prolonged, heavy panting observed within the flock, typically during summer months. Birds will be less motivated to move and feed, will sit upright with beaks open and will make visible respiratory movements. During periods of hot weather attention should be paid to air throughput, distribution and air speed at bird level.

86. Where birds do not have a choice of environment, for example to access a range, then it is vital to maintain the environment within the main housing such that the birds can maintain their normal body temperature without resorting to the need to pant or huddle.

87. Any issues around balancing temperature and ventilation should be discussed with your ventilation system provider or a technical consultant.

Lighting

All keepers of laying hens ★

Paragraphs 14 to 16 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

14. Animals kept in buildings **must not** be kept in permanent darkness.

15. Where the natural light available in a building is insufficient to meet the physiological and ethological needs of any animals being kept in it then appropriate artificial lighting **must** be provided.

16. Animals kept in buildings **must not** be kept without an appropriate period of rest from artificial lighting.

Holdings of 350 or more laying hens

Paragraph 4 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

4. All buildings **must** have—

(a) levels sufficient to allow all hens to see one another and be seen clearly, to investigate their surroundings visually and to show normal levels of activity and where there is natural light, light apertures **must** be arranged in such a way that light is distributed evenly within the accommodation; and

(b) after the first days of conditioning and to prevent health and behavioural problems a lighting regime that—

(i) follows a 24-hour rhythm and includes an adequate uninterrupted period of darkness lasting about one third of the day, so that the hens may rest and to avoid problems such as immunodepression and ocular anomalies; and

(ii) provides a period of twilight of sufficient duration when the light is dimmed so that the hens may settle down without disturbance or injury.

88. In normal conditions, in all systems, light intensity should be at least 10 lux, measured at any feed trough level. Whilst reduction in lighting level may assist in addressing behavioural problems such as injurious feather pecking or cannibalism, this may reflect a response to the change in light intensity from “normal” (for that flock) rather than the actual lux level of the lighting intensity itself. See also paragraph 66.

89. Birds, when given the choice, will move between different light intensities through the day. However, in cage systems, measures should be taken to ensure that light distribution is as even as possible, other than in the nest area which should, where possible, be much lower (less than 1 lux). 20 lux or above is ideal for the brightest areas of enriched cages and non-cage systems, with other areas being darker.

90. A period of twilight (between 1 and 5 lux) should be provided to give time for laying hens to adjust to changing light and dark patterns and give them time to roost.

	LIGHT INTENSITY (in lux)
Nest area	Less than 1 lux
Twilight period	Between 1 and 5 lux
Normal conditions	At least 10 lux. 20 lux or above is ideal in brightest areas

91. Birds perceive fluorescent strip light differently to humans, and can perceive the fast flickering of these lights, so they should be avoided. LED or incandescent lights are preferable, with LED having the advantage of being more efficient. As hens perceive different types of lighting differently, however, care should be taken when changing between lighting source types.

Litter

Holdings of 350 or more laying hens in enriched cages

Paragraph 12(c) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

12. Laying hens **must** have—

(c) litter such that pecking and scratching are possible

Holdings of 350 or more laying hens in non-cage systems

Paragraph 17(e) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations states:

17. All systems **must** be equipped in such a way that all laying hens have—

(e) at least 250cm² of littered area per hen, the litter occupying at least one third of the ground surface.

92. Dustbathing and foraging (i.e. pecking and scratching) behaviours are highly motivated in laying hens. The prevention of these natural behaviours can cause considerable frustration and might result in feather pecking behaviour. Hens should therefore have access to good quality litter suitable for the expression of natural behaviours, including dustbathing and scratching, and to prevent health and welfare problems. Littered areas should be available to the hens immediately when they are housed.

93. The litter should be of an appropriate quality for the purpose, and **must not** contain anything that could be toxic or cause injury to the hens. It should be friable (loose) and should be dry on the surface. It should be small (e.g. less than 1 cm²), loose particles (e.g. woodshavings, sand, chopped straw) that hens can manipulate easily and toss into their plumage. Litter with fine particles that are absorbent and

low in lipid content is ideal for dustbathing, as it can penetrate between feathers and will remove excess feather lipid (e.g. sand). Litter which is made up of larger particles can be used as a base layer, providing it will break down easily and is supplemented with a top layer of smaller particles. In enriched cages, layers' feed is an acceptable form of litter, when provided inside the cage.

94. Litter should be inspected frequently for signs of mould or infestation, especially under drinkers or near the walls, and appropriate action should be taken to rectify any problem. Litter should also be inspected to ensure it does not become capped (with a hard, non-friable, surface layer), wet or excessively dusty. There will sometimes be particular areas of the house where capping occurs, as a result of environmental conditions. As long as this is only occurring in small areas, and the majority of the litter is friable, this is acceptable

95. In non-cage systems, all hens **must** have access to a littered area, which **must** be maintained in a friable condition. Average depth of litter should be at least 5 cm during nest box training and approximately 10 cm after nest box training is complete. Litter should be topped up as necessary to maintain its depth and friability. ★

96. Dustbathing can be a social activity and therefore there should be sufficient suitable good quality litter available to perform dustbathing as a group activity, but without being disturbed by other birds performing other activities. If no or only single birds are seen dustbathing this may suggest insufficient space or litter quality issues.

97. Where earthen floors are used, overlaying the floor with a damp-proof membrane before applying the litter will improve the chances of maintaining good litter quality. ★

98. Litter quality can also be improved by reducing stocking density.

99. Leakage or spillage from drinkers can have a negative impact on litter quality. Drinkers should be well maintained and positioned at an appropriate height for all birds. The water pressure should be checked frequently to ensure there is no leakage. Drinkers should be descaled frequently (between flocks) to overcome issues of leakage. Leaks should be fixed as soon as possible. Localised litter replacement may be necessary in the short term in badly affected areas, in conjunction with raised ventilation and temperatures to remove large amounts of excess moisture. However, long term solutions should be found and specialist advice should be sought where appropriate.

100. Litter quality can be affected by popholes in free-range systems. See Paragraphs 80, 187 and 196.

Noise

Holdings of 350 or more laying hens

Paragraph 3 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

3. In all systems in which laying hens are kept—

- (a) the sound level **must** be minimised;
- (b) constant or sudden noise **must** be avoided; and
- (c) ventilation fans, feeding machinery or other equipment **must** be constructed, placed, operated and maintained in such a way that they cause the least possible amount of noise.

101. When designing houses or installing new equipment, the noise levels should be checked and, where necessary, appropriate sound proofing should be installed to achieve acceptable levels before birds are placed. All equipment in regular use, such as ventilation, feeding equipment and back-up generators, should be assessed for noise levels as part of the regular checks and maintenance detailed in the health and welfare plan.

102. Any repairs or renovations requiring the use of noisy equipment should ideally be carried out between flocks, but if not, they should be performed during the birds' normal waking hours and the sounds introduced in such a way that causes minimum startle and smother risk to the birds.

Feed and water

All keepers of laying hens

Paragraphs 22 to 27 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

22. Animals **must** be fed a wholesome diet which is appropriate to their age and species and which is fed to them in sufficient quantity to maintain them in good health, to satisfy their nutritional needs and to promote a positive state of well-being.

23. Animals **must not** be provided with food or liquid in a manner, nor must such food or liquid contain any substance, which may cause them unnecessary suffering or injury.

24. All animals **must** have access to feed at intervals appropriate to their physiological needs (and, in any case, at least once a day), except where a veterinary surgeon acting in the exercise of that profession otherwise directs.

25. All animals **must** either have access to a suitable water supply and be provided with an adequate supply of fresh drinking water each day or be able to satisfy their fluid intake needs by other means.



26. Feeding and watering equipment **must** be designed, constructed, placed and maintained so that contamination of food and water and the harmful effects of competition between animals are minimised.

27. **No other substance**, with the exception of those given for therapeutic or prophylactic purposes or for the purpose of zootechnical treatment, may be administered to animals unless it has been demonstrated by scientific studies of animal welfare or established experience that the effect of that substance is not detrimental to the health or welfare of the animals; and in this paragraph “zootechnical treatment” has the meaning given by Article 1(2)(c) of Council Directive 96/22/EC concerning the prohibition on the use in stockfarming of certain substances having a hormonal or thyrostatic action and of beta-agonists, and repealing Directives 81/602/EEC, 88/146/EEC and 88/299/EEC.

Holdings of 350 or more laying hens in enriched cages

Paragraphs 13 and 14 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

13. A feed trough which may be used without restriction **must** be provided and its length must be at least 12cm multiplied by the number of hens in the cage.

14. Each cage **must** have a drinking system appropriate to the size of the group and where nipple drinkers are provided, at least 2 nipple drinkers or 2 drinking cups **must** be within the reach of each hen.

Holdings of 350 or more laying hens in non-cage systems

Paragraphs 17 (a) and (b) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

17. All systems **must** be equipped in such a way that all laying hens have—

(a) either linear feeders providing at least 10cm per hen or circular feeders providing at least 4cm per hen;

(b) either continuous drinking troughs providing 2.5cm per hen or circular drinking troughs providing 1cm per hen, and in addition, where nipple drinkers or drinking cups are used, there **must** be at least one nipple drinker or cup for every 10 hens and where drinking points are plumbed in, at least 2 drinking cups or 2 nipple drinkers **must** be within reach of each hen.

103. Feed and water **must** be readily accessible to all hens throughout the period of lighting. ★

104. Feeding and watering equipment should be designed, constructed, placed, operated and maintained in such a way that:

- a) it minimises spillage or contamination of feed and water;
- b) all laying hens have sufficient access to water and feed;
- c) it does not cause or result in injury to hens;
- d) it operates in all weather conditions;
- e) the consumption of water and feed can be monitored; and
- f) when appropriate outdoor facilities are used, they can be easily removed or turned off in disease control situations.

105. In addition, all equipment **must** be able to be easily and effectively cleaned and disinfected. Novel feeder and drinker designs will be assessed by Scottish Government Poultry Officers for compliance with the legislation.

106. Care should be taken to ensure that drinker heights are comfortable for the birds to reach the water trough or nipple without having to stretch unduly.

107. Avoid contamination of feeders or drinkers with faecal material by ensuring that perches are not sited such that droppings are deposited on feeders or drinkers. Where nipple drinkers with cups are used, smaller rather than larger cups will reduce the chance of faecal contamination.

108. Feeder space allocation should be sufficient to enable the hens to obtain adequate feed with the minimum of competition. If feed is not provided continuously, additional trough space may be needed to allow all hens to eat at the same time.

109. Sudden changes in the type or quantity of feed and feeding procedures, other than those appropriate to the physiological needs of the laying hens, should be avoided except in case of emergency. Feeding mash can help to increase the time spent eating and reduce the risk of injurious pecking. Owners / keepers should ensure, with the appropriate expert nutritional and veterinary advice, that the hens' feed has the appropriate balance of amino acids and level of sodium and take particular care with gradually reducing the protein content of any diet. Birds should have regular access to insoluble grit from an early age, to help develop the digestive system and to aid good digestion throughout the birds' lives.

110. Where practical, a small amount of whole grain, pellets or grit can be scattered over the indoor littered area each day to encourage foraging and scratching and reduce the likelihood of injurious pecking. See Paragraphs 153-154.

111. Any enrichments or any other changes to the birds' environment should be introduced slowly and gradually, or from the outset.

112. Stale or contaminated feed or water should not be allowed to accumulate and should be replaced immediately.

113. Body condition, body weight and egg quality and production should be used to monitor the effectiveness of the feeding regime.

114. Daily access to fresh water throughout the period of lighting and a sufficient number of drinkers, correctly maintained, well distributed and adjusted for height and pressure, should be provided. In longer poultry houses and in those with greater floor slopes, water pressure regulators should be provided if spillage or leakage is considered a problem.

115. Where possible, water meters should be fitted to each house to enable daily monitoring of water usage. A water meter is a useful management tool; daily records of water consumption provide an early warning of potential problems.

116. Arrangements should be made in advance to ensure that adequate supplies of suitable feed and water can be made available in emergencies such as interruptions in power supplies, or when water freezes.

117. Systems which call for the complete withholding of feed and water on any day **must not** be adopted. **In no circumstances** may hens be induced to moult by withholding feed and water. However, feed, but not water, may be withheld for up to 12 hours before expected slaughter time. See also paragraph 139.

Mutilations

All keepers of laying hens

Section 20 of the Animal Health and Welfare (Scotland) Act 2006 states that:

20. (1) A person commits an offence if the person—

- (a) carries out a prohibited procedure on a protected animal, or
- (b) causes a prohibited procedure to be carried out on a protected animal.

(2) A person (“person A”) who is responsible for an animal commits an offence if—

- (a) another person carries out a prohibited procedure on the animal, and
- (b) person A—
 - (i) permits that to happen, or
 - (ii) fails to take such steps (whether by way of supervising the other person or otherwise) as are reasonable in the circumstances to prevent that happening.

(3) A person commits an offence if the person takes a protected animal, or causes a protected animal to be taken, from a place in Scotland for the purpose of having a prohibited procedure carried out on the animal at a place outwith Scotland.

(4) In this section, references to the carrying out of a prohibited procedure on an animal are to the carrying out of a procedure which involves interference with the sensitive tissues or bone structure of the animal.

(5) This section does not apply—

(a) in relation to a procedure which is carried out for the purpose of medical treatment of an animal,

(b) in relation to a procedure which is carried out—

(i) for a purpose which,

(ii) in such manner as, and

(iii) in accordance with such conditions as,

the Scottish Ministers may by regulations specify, or

(c) in such circumstances as the Scottish Ministers may by regulations specify.

118. All mutilations of laying hens are banned under the Animal Health and Welfare (Scotland) Act 2006; certain procedures (see Annex 2) are excluded from this ban under the Prohibited Procedures on Protected Animals (Exemptions) (Scotland) Regulations 2010 (“the Exemption Regulations 2010”), provided that they are carried out by a person permitted to carry out the procedure and:

- a) for a purpose which is specified, in relation to any such procedure, in column 2 of the corresponding entry in the relevant Schedule to the Exemption Regulations 2010;
- b) in accordance with the relevant requirements in the relevant Schedule to the 2010 Regulations;
- c) in such a way as to minimise the pain and suffering it causes to the animal;
- d) in hygienic conditions; and
- e) in accordance with good practice.

119. Mutilations can cause pain to hens and should only be carried out where necessary to avoid a worse welfare outcome. They should only be applied having sought appropriate advice on possible alternative interventions in each case and not as a routine practice.

Beak Trimming

All keepers of laying hens

Schedule 3 of the Prohibited Procedures on Protected Animals (Exemptions) (Scotland) Regulations 2010 states that:

- 1) Beak trimming of poultry **may only** be performed to prevent feather pecking and cannibalism and, in relation to laying hens kept on holdings of 350 or more and meat chickens kept on holdings of 500 or more, when the animals are less than 10 days old.
- 2) Beak trimming of laying hens kept on holdings of 350 or more **may only** be performed using the infra-red procedure.
- 3) In an emergency, to control an outbreak of feather pecking or cannibalism in laying hens, conditions 1 and 2 do not apply.

120. Beak trimming is permitted **only** for the purpose of reducing injurious pecking.

121. On holdings of 350 or more hens, except in cases of emergency (see paragraphs 127 and 128), it is permitted **only** on hens less than 10 days old and **only** using infra-red technology (Infra-red beak treatment - IRBT).

122. In practice this is carried out at day-old in the hatchery. To remove the need for routine beak trimming, allowing it to be phased out in due course, every effort is needed by owners / keepers to reduce injurious pecking in their flocks.

123. Infra-red beak treatment equipment should be monitored to ensure effectiveness of treatment, in terms of beak length and chick welfare. Any concerns about the effectiveness of IRBT should be referred back to the hatchery. Equipment should be well maintained and calibrated.

124. Owners / keepers should have an action plan to tackle injurious pecking, including management strategies and interventions to reduce the risk of injurious pecking. See also paragraphs 60-67.

125. Once all management strategies are in place and good feather cover is achieved throughout lay for at least two consecutive flocks, stopping beak trimming in future flocks should be actively considered, in consultation with a veterinary surgeon and other appropriately qualified technical advisors.

126. If an outbreak of injurious pecking does occur it should be tackled immediately by appropriate changes in the system of management. As a last resort, in birds that have not had their beaks trimmed as chicks, and when all other intervention strategies have been attempted, emergency beak trimming can be carried out on veterinary advice, by trained and competent operators, using appropriate equipment.

127. If it is necessary, emergency beak trimming should be carried out to the highest possible standards by trained operators. Only the minimum necessary should be removed, and certainly no more than one third of each of the upper and lower beaks. Any subsequent haemorrhage must be arrested by cauterisation.

128. In smaller flocks, beak trimming will not necessarily have been carried out as standard before 10 days old. In that case, if an outbreak of injurious pecking does occur the procedures in paragraphs 126 and 127 apply. ★

Responsible medicines usage and record keeping

All keepers of laying hens

Paragraphs 7 and 8 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

7. A record **must** be maintained of—

(a) any medicinal treatment given to animals; and

(b) the number of mortalities found on each inspection of animals.

8. The record referred to in paragraph 7 **must** be retained for a period of at least 3 years from the date on which the medicinal treatment was given, or the date of the inspection, as the case may be, and **must** be made available to an inspector on request.

129. Authorised veterinary medicinal products should be used for the animals specified and should be administered according to the manufacturer's instructions. Where additional instructions are required, these must be given by a veterinary surgeon.

130. In certain instances a veterinary surgeon can prescribe medicines that are not intended for the specific condition and species for which the product is authorised. This can only be done if there is no alternative authorised medicine available. Products used would need to comply with the law. See Annex 1. Further information on the 'cascade' system and prescribing unauthorised medicines is available from Defra's Veterinary Medicines Directorate.

131. Under welfare legislation, records of medicinal treatment given to any farmed animal must be kept for at least three years. However, there are further record keeping requirements in relation to medicines under other legislation regarding food producing animals, which state that records on acquisition, usage, administration and disposal of medicines **must be kept for at least 5 years**. See Annex 1. Laying hens are classed as food producing animals for the purposes of the Veterinary Medicines Regulations 2013 even in the case of smallholders, crofters and backyard keepers whose eggs are kept for their own consumption. ★

132. The medicines records **must** be available for a government or local authority inspector to review at any time.

133. Records are an essential aid to management. The records kept should include supplier details, numbers of birds housed, date of arrival, visitors to site, feed and water consumption, egg numbers, egg quality, sales of eggs, results of health and welfare checks, mortality, behavioural abnormalities, air temperature, air quality and results of welfare outcome assessments.

134. Mortality, culling (including reason for culling) and daily morbidity levels in the case of a disease outbreak should be closely monitored. Post mortems should be carried out in cases where mortality levels are significantly higher than breeders' targets. Records should be kept.

Catching and handling

135. There are detailed rules relating to the transport and movement of poultry to and from the farm which are covered by different pieces of legislation. See Annex 1. Owners / keepers should be familiar with these legal requirements, including any restrictions and licensing requirements associated with movements of both birds and eggs during notifiable disease outbreaks. See Annex 3 for more information about good practice in relation to transport.

136. Legal responsibility for bird welfare throughout any transport process is set out in welfare in transport legislation. Birds with severe and / or painful conditions are unfit for transport. Any birds remaining on farm, which cannot be transported, should be humanely culled by a trained and competent person and in accordance with the specific welfare at the time of killing legislation. See Annex 3 for advice on humane culling.

137. Catching and handling should be carried out quietly and confidently, exercising care to avoid unnecessary struggling which could bruise or otherwise injure the birds. This requires skill and it should only be undertaken by competent persons, i.e. those who have been appropriately trained for the task and have received clear guidance and instructions from the owner / keeper. Catching and handling by catching teams should always be monitored by a supervisor, who should stop the process if the correct procedure is not followed or catching teams are non-compliant with bio-security or welfare standards.

138. Panic among the birds should be avoided in order to minimise the risk of injury. Birds should be approached calmly, quietly and slowly in order to minimise disturbance. Where possible, hens should be caught during night time or when the light levels are reduced (see paragraphs 141), as they will be calmer.

139. Feed should not be withheld for more than 12 hours before expected slaughter time. Prior to transport, water should be provided up to the time of catching, and should be made available periodically for birds waiting to be caught, depending on the length of the catching operation.

140. Transporters of hens should minimise the length of the journey and carry out transport without delay. There should be coordination with the slaughterhouse in order to limit the time hens are held in containers before and after transport, and to advise of any breakdowns. Only journey times of under 12 hours are permitted without food and water being provided. Contingency plans should be in place to address any unexpected delays. Specific rules apply to birds under 72 hours of age.

141. Before de-populating layer and breeder houses, any hindrance from fixtures and fittings, especially sharp edges and protrusions, **must** be removed. Care **must** be taken throughout the process of catching hens in order to avoid panic and subsequent injury to and smothering of the birds, for example, by temporarily reducing the intensity of the light or using a blue or red light. However, changes in light intensity or use of blue or red lights should only be short term. See Paragraph 66.

142. Hens in cages are prone to wing fractures during the catching and withdrawal process, most likely due to wing flapping during extraction from the cage, so care should be taken to avoid this. The cage door should be opened fully and hens **must** be removed from the cage singly to avoid injury or suffering. The breast should be supported during removal from the cage. Alternatively, a food trough cover can be used to let hens slide out of the cage.

143. The Humane Slaughter Association's guidance on Poultry Catching and Handling recommends that birds be carried individually, upright, and held around the body and wings. This is best practice and should be adopted wherever possible. If, for any reason, it is necessary to carry the birds in another way, birds may be carried by the legs. In that case they **must** be held by both legs, and care should be taken to avoid hitting solid objects, particularly if their wings are flapping. They **must not** be carried by their wings, head, tail or neck. The number of hens carried will depend upon the size of the hen and the ability of the carrier, but a maximum of three per hand **must not** be exceeded. Distances which hens are carried should be minimised as far as possible, for example, by bringing transport containers as close as possible to the hens. ★

144. Transport containers with large openings should be used for pullets and hens to avoid damage to the birds. The design, size and state of repair of any container used to carry birds must allow them to be put in, conveyed and taken out without injury. Care should be taken to ensure no body parts become trapped between the bars or openings, and checks should be made to make sure no body parts are protruding from the crates before they are stacked or moved. The condition of crates should be checked and, where broken crates are identified, they **must not** be used. Care should also be taken when crates are loaded onto vehicles, and in their transportation and unloading, to avoid physically shocking the birds.

145. During the time birds are held in the containers, including prior to and after transport, they should be protected from bad weather and excessively hot or cold conditions. Birds should not be allowed to become heat stressed (as indicated by prolonged panting) by being left in hot containers or exposed to strong direct sunlight, nor should they be exposed to cold stress due to inadequate protection from rain and high winds. Adequate ventilation for the hens is essential at all times.

Housing: General requirements

All keepers of laying hens

Paragraphs 11 and 12 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

11. Materials used for the construction of accommodation and, in particular, for the construction of pens, cages, stalls and equipment with which the animals may come into contact, **must not** be harmful to them and must be capable of being thoroughly cleaned and disinfected.
12. Accommodation and fittings for securing animals shall be constructed and maintained so that there are no sharp edges or protrusions likely to cause injury to them.

Holdings of 350 or more laying hens

Paragraphs 6 and 8 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

6. Cages **must** be suitably equipped to prevent hens escaping.
8. The design and dimensions of the cage door **must** be such that an adult hen can be removed without undergoing unnecessary suffering or sustaining injury.

146. When new accommodation for laying hens is planned, a suitable site should be selected taking into consideration the risks from outside environmental factors such as traffic, noise, light, vibration, flooding, atmospheric pollution, predators, proximity to other poultry units and disease risks. See also paragraph 27. Where appropriate, advantage should be taken of natural features to provide shelter and to protect birds from predators, rodents and other animals. ★

147. The design, construction and maintenance of enclosures, buildings and equipment for laying hens should be such that they: ★

- a) allow the fulfilment of essential biological needs and the maintenance of good health and welfare;
- b) facilitate good management of the hens and ease of routine inspection of all areas / levels;
- c) allow for easy maintenance of good conditions of hygiene and air quality;
- d) provide shelter from adverse weather conditions;

- e) limit the risk of disease, disorders manifested by behavioural changes, traumatic injuries to the hens, injuries caused by hens to each other and, as far as possible, contamination of the hens by droppings;
- f) exclude predators, rodents, and wild animals and minimise insects;
- g) allow for the prevention and treatment of infestations of internal and external parasites;
- h) incorporate damp-proof membranes to prevent insulation breakdown and measures to prevent easy access by vermin to the insulation material; and
- i) provide sufficient suitable lighting to enable normal behaviour.

148. Multi-tier systems with perforated platforms should have dropping belts, trays or some other kind of barrier beneath to prevent waste falling on birds below.

149. Hens should be kept in such a way that they can keep themselves clean.

150. Ventilation, heating, lighting, feeding, watering and all other equipment should be designed, sited, installed and monitored to avoid risk of injuring hens.

Stocking density and freedom of movement

All keepers of laying hens

Paragraphs 9 and 10 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations state that:

9. The freedom of movement of animals, having regard to their species and in accordance with established experience and scientific knowledge, **must not** be restricted in such a way as to cause them unnecessary suffering or injury.

10. Where animals are continuously or regularly tethered or confined, they **must** be given the space appropriate to their physiological and ethological needs in accordance with established experience and scientific knowledge.

Holdings of 350 or more laying hens in enriched cages

Paragraph 12(a) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations states that:

12. Laying hens **must** have—

(a) at least 750cm² of cage area per hen, 600cm² of which shall be usable area; the height of the cage other than that above the usable area shall be at least 20cm at every point and no cage shall have a total area that is less than 2000cm².

Holdings of 350 or more laying hens in non-cage systems

Paragraph 20 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations states that:

20. Subject to paragraph 21, the stocking density **must not** exceed 9 laying hens per square metre of usable area.

151. When determining the stocking density, consideration should be given to breed of laying hen, system of housing, colony size, temperature, ventilation and lighting, as well as to the number of perching structures and welfare outcomes of the previous flock. Paragraphs 68-73 on Skeletal Health note the health benefits to birds of being able to be active.

152. Bird numbers may need to be reduced in an emergency situation such as heat stress. See also paragraph 39. Planned bird numbers for future flocks may need to be reduced where historical evidence shows ventilation is insufficient to meet environmental requirements, for example, managing temperature, ammonia levels and litter condition.

Environmental enrichment

153. Environmental enrichment can improve bird health and welfare during rearing and in lay, by reducing disturbances, aggression, injurious pecking, fear responses and stress. It can also improve bone strength by increasing the level of physical exercise. The aim of different enrichment materials is to:

- a) Increase the amount of time the birds spend actively standing, walking, running, jumping and dustbathing;
- b) Increase normal foraging behaviours, providing the opportunity to seek and peck at other materials in their environment, thus reducing the risk of injurious pecking directed towards other birds; and
- c) Reduce the number of aggressive interactions between birds and create environments in which birds can escape from confrontation and find safe refuges.

154. Effective enrichment can include:

- a) straw and shaving bales to jump on, to create low barriers and partitions within larger spaces and to provide a substrate to peck at – although bales should not be too high as this may increase the risk of keel damage if birds jump from the top;
- b) fixed aerial perches and platforms at different levels to support different behavioural uses during the day and night, including refuge from other birds;



- c) novel food for pecking. See also paragraph 65(i);
- d) pecking blocks – some may incorporate nutritive value or beak blunting effects;
- e) a range of destructible pecking objects;
- f) dustbathing boxes; and
- g) covered open-air extensions to provide additional space, litter and access to natural daylight in housing systems where range access is not available or may be restricted for periods of time. (These should not, however, be included in the house measurements for stocking density calculations.)

Non-cage systems: additional housing requirements

Holdings of 350 or more laying hens in non-cage systems

Paragraph 17 (c) – (e) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

17. All systems **must** be equipped in such a way that all laying hens have—

(c) at least one nest for every 7 hens and if group nests are used, there **must** be at least 1m² of nest space for a maximum of 120 hens;

(d) perches, without sharp edges and providing at least 15cm per hen; perches **must not** be mounted above the litter; the horizontal distance between perches **must** be at least 30cm and the horizontal distance between the perch and the wall **must** be at least 20cm; and

(e) at least 250cm² of littered area per hen, the litter occupying at least one third of the ground surface.

Holdings of 350 or more laying hens in non-cage systems

Paragraph 18 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations states that:

18. The floors of installations **must** be constructed so as to support each of the forward-facing claws of each foot.

Holdings of 350 or more laying hens in non-cage systems

Paragraph 19(a) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations states:

19. In addition to the requirements of paragraphs 17 and 18—

(a) if systems of rearing are used where the laying hens can move freely between different levels—

(i) there **must not** be more than 4 levels;

(ii) the headroom between the levels **must** be at least 45cm;

(iii) the drinking and feeding facilities **must** be distributed in such a way as to provide equal access for all hens; and

(iv) the levels **must** be so arranged as to prevent droppings falling on the levels below.

Usable Area

155. Usable area may be made up of the ground surface of the building where accessible to the hens and any additional raised areas or platforms at least 30 cm wide with a floor slope not exceeding 14% and with headroom of at least 45cm. Area taken up by a nest **does not** count as usable area. Perches must be 30cm or more apart to be calculated as part of the perching space.

156. Hens are prone to keel bone damage, which is likely to be painful. Platform design and positioning should therefore be aimed at minimising the risk of birds striking edges or surfaces that may cause keel bone breaks. Provision of extra platforms and ramps has been shown to reduce falls from tiers, and ramps reduce keel bone fractures in multi-tier systems. Ramps or transition areas should be provided to allow birds to easily traverse from the highest points in the house to the litter / ground area to minimise any potential injuries. Surfaces and perches should be fixed and not free-hanging so that they do not move, causing birds to fall, trip or otherwise land off-balance.

Nesting

157. Nests **must** be a separate space for egg laying. The intention of providing a nest and nest substrate to laying hens is to give them a comfortable area in which to lay an egg, and to fulfil nesting behaviour which is a highly motivated behaviour under hormonal control. When they have the opportunity, hens naturally seek secluded, comfortable places to lay. Where large numbers of eggs are being laid outside of the nest, this probably indicates that these needs are not being met or that hens are not being guided to the nest at early onset of lay. ★

158. Nests should be easily accessed. They should be secluded, and clearly partitioned from other areas by means of separators such as curtains, thus allowing laying hens to isolate themselves from those carrying out other activities. The curtains should be full-length to the nest box floor, or, where necessary, with as small a gap as possible in order to allow an egg to pass underneath (e.g. about 5 cm). Feeding tracks or other installations should not be located in or accessed via the nesting area.

159. The partition should also be used to create a lower light intensity in the nesting area. Birds prefer very low lighting of less than 1 lux for nesting and so nest design and location should attempt to reflect these lower lighting needs. Nest lighting may be used to encourage young hens to explore the nest box area; however, these should be turned off as soon as egg production in the nest box reaches an acceptable level, to prevent a greater risk of vent / cloacal pecking.

160. Nests should be draught free, and should be lined in such a way as to create an environment which encourages nesting (pre-laying) behaviour. Material such as Astroturf, rubber matting and perforated plastic matting is acceptable providing it is sufficient to prevent birds from coming into contact with the wire mesh of the nest floor. If these become worn, they should be replaced. Where practicable, manipulable materials such as straw can be provided to allow hens to better carry out nest building behaviours.

161. Individual nests should be designed to accommodate only one hen at a time. The nests should be easily accessible by all birds and the location should not increase the risk of collision injury on entry or exit.

162. As birds are attracted to dark areas for nesting, they can be discouraged from nesting on the floor and under multi-tier sections by raising the light levels in these areas.

Perching



163. Floors and perches should be of a suitable design and made from materials that are comfortable and do not cause pain, distress or injury to the hens. They should provide sufficient support, particularly for the forward facing toes and claws of each foot. Perches should be of sufficient length to allow for the possibility of all hens roosting at the same time. The perch should be of an acceptable diameter to permit the bird to grasp it. (Approximately 11 cm is the preferred circumference, with a diameter of approximately 3.5 cm.) Floors and perches should be kept sufficiently dry and clean.

164. There must be at least 15 cm of perch space per hen, and perches need to be fully accessible and usable to be counted as perch space. Slatted floors, or perches integrated into or attached to the floor, **do not** count as perch space.

165. Hens use perches for roosting, to reach resources, and to escape unwanted attention from other birds. Raised perches can provide a comfortable resting place for hens. When they have the opportunity, hens naturally seek perches above ground level to roost at night and favour the highest perches available to them.

166. Perches should not be too high above the slats or tier level so that hens are less likely to injure themselves on descent. Research has demonstrated that as perch height relative to the slat or litter floor level increases, so does the percentage of birds with keel fractures at the end of lay. A maximum height of about 1 m above the slats or tier level will reduce the chances of keel bone damage.

167. Perches should be fixed (not free-swinging) and not placed directly one above another in the vertical plane, but stepped at an angle of no more than 45° and no more than 50-75 cm apart, but not so close as to encourage vent pecking.

168. There **must** be a sufficient gap on either side of any perch to allow the hens to grip the perches without risk of trapping their claws. If a number of birds are presenting with poor foot condition, the design, location and quantity of perches should be reviewed.

169. Ideally, the headroom above a perch should be 45 cm, and in most cases should be at least 40 cm. However, it is acceptable for a small proportion of perches to have less headroom, as long as the birds can reach these perches without flying and there is at least 24 cm of headroom. Newly built systems should ideally provide 45 cm headroom for all perches.

170. Perches that are rectangular or square rather than round or oval, and slightly rough rather than smooth to provide grip, are preferable and cause less pressure on the keel bone. Solid perches may help prevent red mite. Thus, when updating existing perch systems, consider using these preferred designs. Review of research indicates that the material is not of great importance to the hen, as long as it isn't slippery. However a prototype perch of soft polyurethane has been shown to reduce peak force to the keel.

171. Perches **must not** be positioned over the litter area.

172. Birds perching on inappropriate structures, such as the edge of feed troughs, can result in foot damage and prevent other birds from accessing feed. Where this behaviour is seen, it may indicate that there are insufficient perches available. If so, the installation of additional perches should avoid these negative outcomes.

173. Using stepped-down lighting at lights off (in which lights at floor level are turned off first) can help to drive the hens up to the perch areas.

174. The installation of perches with electrical pulses being carried through the underneath of the perch for red mite control are acceptable, but should be installed by a qualified fitter.

Novel Designs and Health & Safety

175. Electric wires may be used to discourage birds laying in corners and smothering when they are first introduced to the house. However, they **must never** be used in front of popholes and other access points to the range for free range birds, or above feeders or water lines at any stage in any system. Running the wires in front of popholes is strongly discouraged, but if unavoidable, the wires must always have an insulated covering over them. Electric wires should be used only as a temporary measure, and should ideally be removed within 3 weeks from the date of housing.

176. For installations more than 2 m in height, consider practical arrangements such as bird / stockman access to the highest levels. Staff should be able to access

and inspect hens on all levels with ease. Likewise, hens should be able to negotiate all levels (vertically and horizontally) without difficulty or risk of injury and to find their way to the litter floor easily.

177. Provision of permanent ladders and access points up and down are actively encouraged to ease movement and access to all areas for birds and staff.

178. Where new / novel house designs are being considered, consult with Scottish Government Poultry Officers and / or your veterinary surgeon to ensure that any issues are raised at an early stage and can be discussed and addressed.

Free range systems: additional housing requirements

All keepers of laying hens

Paragraph 17 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 states that:

17. Animals not kept in buildings **must**, where necessary and possible, be given protection from adverse weather conditions, predators and risks to their health and, at all times, have access to a well-drained lying area.

Holdings of 350 or more laying hens in non-cage systems

Paragraph 19(b) of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations states that:

19. In addition to the requirements of paragraphs 17 and 18—

(b) if laying hens have access to open runs—

(i) there **must** be several popholes giving direct access to the outer area, at least 35cm high and 40cm wide and extending along the entire length of the building; in any case, a total opening of 2m must be available per group of 1,000 hens; and

(ii) such runs **must** be of an area appropriate to the stocking density and to the nature of the ground, in order to prevent any contamination, and equipped with shelter from inclement weather and predators and, if necessary, appropriate drinking troughs.

Range

179. 'Free-range eggs' must be produced in systems of production which satisfy the requirements of Part 5 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations 2010. The following practices should be followed:

- a) hens **must** have continuous daytime access to open-air runs. However, this requirement does not prevent a producer from restricting access for a limited period of time in the morning hours in accordance with usual good farming practice, including good animal husbandry practice. In case of other restrictions, including veterinary restrictions adopted in law to protect public and animal health, having the effect of restricting access of hens to open-air runs, eggs may continue to be marketed as 'free-range eggs' for the duration of the restriction, but under no circumstances for more than 16 weeks;
- b) open-air runs to which hens have access should be mainly covered with vegetation and not be used for other purposes except for orchards, woodland and livestock grazing if the latter is authorised by the competent authorities. Range areas need to be easily accessible and maintained in such a way that vegetation does not become impenetrable. Routes from range areas back to housing for birds should not present undue difficulties for birds; ★
- c) the maximum stocking density of open-air runs **must not** be greater than 2500 hens per hectare of ground available to the hens or one hen per 4m² at all times. However, where the area is divided into clearly defined paddocks and rotation is practised, with hens given even access to the whole area over the flock's life, and at least 10m² per hen is available overall, each paddock used must at any time assure at least 2.5m² per hen;
- d) open-air runs should not extend beyond a radius of 150m from the nearest pophole of the building. However, an extension of up to 350m from the nearest pophole of the building is permissible provided that a sufficient number of shelters are evenly distributed throughout the whole open-air run with at least four shelters per hectare. See paragraphs 190-193.

180. An area of hardstanding immediately outside of the popholes (e.g. no more than 2m width of concrete or smooth edged stones around the house) with or without plastic slats is acceptable and hygienic so long as the area is thoughtfully designed to encourage birds' access and use of shelters and range area. ★

181. Factors such as soil type, drainage, size of flock and frequency of pasture rotation are very important in deciding the number of laying hens that a particular area can carry. Heavy, poorly drained soil can carry fewer hens than land that is light and well drained.

182. Land on which free range birds are kept for prolonged periods may become "fowl sick", i.e. contaminated with organisms which cause or carry disease to an extent which could seriously prejudice the health of the birds on the land. Birds should be routinely monitored to check for signs indicative of a build-up of pathogens on the land and appropriate action taken.

183. The time taken for land to become 'fowl sick' depends on the type of land and stocking density. Appropriate measures should be taken to prevent fowl sickness. A new ranging area can be provided by moving the housing (in the case of portable units) or by rotating the ranging area outside fixed buildings. Unless the house is ★

moved frequently, it is good practice to protect the ground immediately adjacent to it, for example, by providing slatted or wire mesh platforms or areas of gravel.

184. Birds **should never** be fed or watered outdoors in open troughs or by scattering feed on the ground. Feed and water provided outside should be covered and inaccessible to wild birds, rodents or other animals. ★

185. If ponds are located on or near to the range, they should be fenced off and / or netted to discourage wild birds, in particular water fowl.

Popholes

186. Birds **must** have direct access to the range.

187. Birds should be encouraged to use the outdoor area through easily and directly accessible popholes from the building, which should be open enough to allow birds to view the range area (except in the event of severe weather – see paragraphs 194-196). The height of the pophole exit should allow birds to view the range area, and should not discourage use or risk injury to the birds. Popholes which are too high may deter the birds from going outside, either because they are unable to see the range or access the pophole easily from the inside, or because of a large drop from the pophole to the outside, particularly if this is on to sharp stones. The maximum acceptable height for pophole position is 0.5m above ground level. If the height of the pophole (from either the inside or the outside) is 45cm or more, then a ramp should be installed to promote easy access to or from the range area. All ramps providing pophole access should be of a sufficiently low gradient that birds will not be deterred from their use on either exit or re-entry. Popholes which are too low, however, may compromise building integrity and mucking out procedures, and may allow water in and affect litter quality. Consideration should therefore be given to the ideal height in each case depending on the particular circumstances. ★

188. Early use of popholes in the laying house is encouraged to promote fulfilment of the birds' behavioural, physiological and biological needs. This can help to minimise the effects of feather pecking and aggressive behaviour. The introduction of popholes being opened should be gradual over a period of 7-10 days, thus allowing the birds to become accustomed to the change in temperature and light intensity. Gradually increasing the aperture of the popholes over this period will minimise any negative effects on the flock. Poor pophole design, introduction of popholes too late in the laying stage or inconsistency in timings of popholes opening may cause negative effects.

189. Access to popholes may be restricted for a period of time in the mornings to maximise eggs laid in the nest boxes while still maintaining free range egg status. Access may be restricted until the majority of eggs have been laid, so free access outside should be resumed no later than 10am. However, this would have to be balanced carefully with other effects on the hens. For example, they should be carefully monitored to ensure that outbreaks of feather pecking do not occur due to hens being prevented from going outside.

Shelters

190. Increasing the amount and variety of natural cover, shelter and shade on the range, such as trees, hedgerows, shrubs and artificial shelters, can promote and maximise range use, which in turn can help to reduce injurious pecking. There can be other benefits to providing tree cover, such as improved egg quality, reduced water runoff, less soil compaction and a reduction in ammonia emissions.

191. Tree cover, or other forms of shelter, should be available close to the housing as hens are reluctant to cross open ground. Shelters should be provided in stages from the house to encourage birds to go outside (for example, at 2-5, 10 and 15 m from the house). In ranges which extend beyond a 150m radius from the main building, there should be at least 4 shelters per hectare, evenly distributed throughout the range.

192. Trees will be classified as shelters on the range area if they are sufficiently mature to provide natural shelter. Saplings in protective casings (e.g. making up a future woodland setting) will not be classified as suitable shelters. Supplementary shelters should be provided until the trees are deemed sufficiently mature. Where woodland is used, sufficient thinning of trees and of lower branches should be performed regularly to allow light to penetrate the forest floor to promote growth of vegetation.

193. Artificial shelters should be erected in such a way that they do not move easily in poor weather, and constructed with a solid or impervious roof. Artificial shelters should be of adequate size to enable several hens to seek cover at once and sufficient in number as appropriate for the flock size. Shelter for approximately 8-10% of the flock, allowing approximately 1m² per 10 hens, should suffice, but this should be discussed further with your Scottish Government Poultry Officer to ensure adequate shelter is available for your particular circumstances.

Weather

194. Sufficient housing should be available to the birds at all times, and precautions should be taken to protect hens against predators. It may be necessary to exclude birds from the range in bad weather or during a notifiable disease outbreak / risk if there is a danger that their welfare will otherwise be compromised. You should discuss with your Scottish Government Poultry Officer if there is a need to house the birds.

195. Inclement weather would be considered to be a combination of: outside temperature (with or without wind chill) of less than 3° C, wind speeds greater than 25 mph (i.e. 40 kph, gale force 6 or higher), snowing, rain falling continuously for 48 hours, or the land is saturated (e.g. large pools of water on the range, not including the hard standing).

196. Planting trees or positioning windbreaks on the range in front of the popholes will also increase the control of indoor temperature. Restricting the number of popholes being open in poor weather conditions may be acceptable to maintain house temperature and litter quality, but should be discussed with your Scottish

Government Poultry Officer. Covered open-air extensions are useful for providing open-air access while reducing exposure to sun, wind and precipitation, and can help maintain litter condition within the house, and act as a good staging point when accessing range, so their use is encouraged. However, the space available on the extension should not be included in the hen house measurements for stocking density calculations.

Enriched cage systems: additional housing requirements

Holdings of 350 or more laying hens in enriched cages

Paragraphs 11 to 16 of Schedule 3 to the Welfare of Farmed Animals (Scotland) Regulations state that:

11. All cage systems (other than those referred to in Part 3) **must** be enriched to comply with the requirements of this Schedule.

Accommodation

12. Laying hens **must** have—

(a) at least 750cm² of cage area per hen, 600cm² of which shall be usable area; the height of the cage other than that above the usable area shall be at least 20cm at every point and no cage shall have a total area that is less than 2000cm²;

(b) a nest;

(c) litter such that pecking and scratching are possible; and

(d) appropriate perches allowing at least 15cm per hen.

Feed

13. A feed trough which may be used without restriction **must** be provided and its length **must** be at least 12cm multiplied by the number of hens in the cage.

Water

14. Each cage **must** have a drinking system appropriate to the size of the group and where nipple drinkers are provided, at least 2 nipple drinkers or 2 drinking cups **must** be within the reach of each hen.

Inspection

15. To facilitate inspection, installation and depopulation of hens there **must** be a minimum aisle width of 90cm between tiers of cages and a space of at least 35cm **must** be allowed between the floor of the building and the bottom tier of cages.

Ethological needs

16. Cages **must** be fitted with suitable claw-shortening devices.

197. The following should be taken into account when calculating usable area:

- a) Extended cage fronts do not count as usable area.
- b) Areas that are not available at all times (such as ejector systems or gated areas) do not count as usable area.
- c) Where sliding doors overlap the cage depth should be measured to the inside edge of the inner door. The overlap area does not count as usable area.
- d) The scratch mat can be counted as usable area, as long as the headroom is 45cm (minimum) and the mat is permanently accessible. If the scratch mat is above the nest box (and thus has a height less than 45cm), then it would not count as usable area.
- e) Feed troughs in the rear of an enriched cage with a rear partition (i.e. single depth) do not affect the usable area – i.e. the measurement can be taken to the rear partition, and the trough area included in the usable area.
- f) Nipple lines or drip troughs below the nipples do not affect the usable area.
- g) Perches cannot be regarded as additional usable area as the area below them is already included in the measurement.

198. There is no minimum legal requirement for the amount of nest space per hen in enriched cages. However, too small a nest would not fulfil the behavioural needs of hens. The legislation for non-cage systems stipulates a requirement of 1m² per 120 hens of nest space, and this could likewise be applied to cages for good practice, i.e. a minimum of 83 cm² per hen.

199. Although a dust bath is not a legal requirement, dust bathing is an important normal behaviour. Ensuring that the scratch mats are of ample size and are provided with scratch material at least once per day will enable hens to express some foraging and dustbathing behaviour. The size and number of scratch mats per cage, and amount of scratch material provided, should be such that all hens in the cage should have an opportunity to use them at some point during the course of the day. Scratch mats should be kept clean as far as practicable.

200. There are no legal requirements regarding the width or diameter of a perch. They should be appropriate for use and meet the physiological needs of hens, i.e. hens should be able to grip the perch and balance safely. They do not necessarily have to fully lock their claws around the perch. See paragraph 163 for guidance on acceptable widths and materials.

201. The following should also be taken into consideration:

- a) Perches should be sufficiently raised to enable hens to put their claws below the perch and there should be at least 20cm headroom (height) above the perch. A feed pipe, for example that delivers mash to scratch mats down the centre of the cage, can be suitable as long as the height above the pipe is at least 20cm.
- b) If drinkers are positioned above a perch so that the distance from the perch to the drinker is less than 20 cm, then this area of the perch does not count as perch space.
- c) Where perches intersect, this area does not count because it is not usable. So where two perches overlap, you may only count one of the two perches fully, and the other perch from a point 15cm from where the perches meet.
- d) Where perches are supported from above, resulting in an area of perch less than 15 cm on one side of the support, this may be considered perch space if birds can use it. If the area of perch less than 15 cm is abutted by the cage wall, then this area will not be considered as part of the perch space, and should be deducted from the calculated perch length available to the hens.

202. There is no legal requirement for the distance between perches in enriched cages, but they should be placed to allow all birds to perch comfortably. Feed trough space should be adequate to prevent competition when all hens are feeding (i.e. no hens are being displaced). Observe hens for competition at the feeders, and if you have any concerns, alert your local Scottish Government Poultry Officer or veterinary surgeon.

203. The following should also be taken into consideration:

- a) If an internal trough is designed and installed to provide feeding access simultaneously at both sides, this may be included in the calculation of feed trough space, providing that contamination of the feed is minimised.
- b) If something obstructs access to the feed trough, then the distance of feed space from the edge of the obstruction should be deducted from the feed space, even if birds chose to reach over and feed past the obstruction.
- c) It is not permitted for birds to access feed from within the nest area. Cage designs where a flexible or curtain sided nest area is sited directly in front of the feed trough, allowing birds to access the feed, do not meet legal requirements in terms of providing sufficient separation from the rest of the cage.
- d) Where scratch areas are located in front of a feed delivery device that can also act as a feed trough, these areas can be counted as feed space providing that access is not restricted by anything other than birds using the scratch area.

204. The number of drinkers should be sufficient to allow hens to satisfy their fluid intake without generating competition. If there is evidence of increased competition for water, reduced water consumption or dehydration a veterinary opinion should be sought.

205. Although enriched cage sizes (and thus the number of birds per cage) vary, often the number of nipples per cage does not increase proportionally. Good practice would suggest that to reduce competition, a ratio of 1 drinker : 10 hens would be appropriate, as with non-cage systems.

206. There is no legal requirement for the size or numbers of claw shorteners. Provision of “suitable claw shortening devices” should be assessed by the outcome for the birds. If there is evidence that claws of hens are commonly overgrown or broken, the provision of claw shortening devices should be improved.

207. Some claw shortening devices may be more effective than others: research comparing different shortening devices in commercial furnished cages showed that perforating the entire baffle plate behind the feeders was more effective than attaching small abrasive strips. Devices may sometimes cause excessive abrasion and injury so their effect should be monitored, and they should be removed if causing harm.

208. Assessment of claw length should be included in regular welfare outcome assessments and detailed in the health and welfare plan. See also paragraphs 18 to 22. Contact your local Scottish Government Poultry Officer or veterinary surgeon if claws appear overgrown, broken, or too short.

209. The aisle width should be measured as the unobstructed width between the outer edges of the feed troughs. The distance to the floor should be measured to the mesh base of the cage. The following should also be taken into consideration:

- a) There is no stipulation about distance between the cage bank and wall; however, sufficient space should be available to facilitate inspection / installation and depopulation.
- b) The distance between the floor and bottom tier of cages should be taken from the floor to the bottom of the usable area providing it allows for inspection / installation and depopulation of hens.
- c) Cat-walks and gantries are not mentioned in the legislation. Whilst the bottom tier **must** be 35 cm above the floor of the building, there is no requirement in the legislation for a 35 cm gap between tiers anywhere else. A cat-walk / gantry should not interfere with the ability to properly inspect / install / depopulate hens as per the requirements of the legislation.

210. Top and bottom rows of cages are often the most difficult to inspect, so extra care should be taken to ensure that inspections here are thorough.

Section 2: Recommendations applying to day-old chicks and pullet rearing

211. The environment in which pullets are reared should be matched, as far as possible, to that in which they will live as adults, for example, by having similar perch and ramp provision or being reared in a multi-tiered system if that is the type of system in which they will be housed as adults. Early life experiences for the individual and the flock as a whole can affect their foraging and pecking behaviour, as well as how they respond to changes or stresses throughout their laying life. Providing increased opportunities for exercise during rearing increases bone strength. See also paragraphs 68 to 71.

212. Chicks start to peck and learn about appropriate food and pecking substrates during the first 24 hours of life. Consideration should be given to providing chicks with both food substrate and water as soon as possible after hatching; chicks should not be expected to rely on the egg yolk sac remnants as the sole source of nutrition.

Brooding (0-6 weeks)

213. Chicks are particularly susceptible to heat stress or chilling in their first few weeks of life. The building should be pre-heated for at least a day before litter is placed prior to chick arrival and the litter **must** be friable and should be dry.

214. The majority of chicks will arrive on the farm as day-old chicks. They need to be provided with additional heat and easy access to water and feed sources. It is important for the chick to learn quickly where feed and water sources are located.

215. The provision of dark brooders (horizontal heat sources with curtains) may improve welfare by providing the opportunity for the young chick to choose the light and temperature to which it is exposed. The chicks under the dark brooders should be inspected frequently.

Pullet rearing environment

216. The provision of enrichment during the rearing period may reduce the risk of developing abnormal and injurious behaviours during the production phase. For example, lack of experience with foraging or dustbathing material may result in ground pecks being redirected to the feathers of other laying hens in the flock. The provision of an enriched environment during the rearing period can help to ensure hens develop and transition well into an enriched laying environment.

217. Pullets should be provided with perches from 7 days of age at the latest and throughout rearing as this results in fewer broken back claws, improved bone mineral content, and improved bone strength in adult hens.

218. The intensity of the light during the light period should never be below 10 lux to allow proper inspection of birds and to avoid abnormal growth of the birds.

219. The maximum stocking density for pullets at the age of 16 weeks should be 20 kg/m² of total usable area in both floor and multi-tier rearing systems. In addition, it is recommended that, when calculated at floor level, stocking density should not

exceed 33 kg/m² at 16 weeks in multitier systems. Increasing space allowance during rearing allows for greater movement and more opportunities for exercise, which can improve muscle and bone growth in laying hens.

Transition from rearing to laying environment

220. The environment in which pullets are reared should be matched as far as possible to their adult environment. There should be close liaison between the pullet rearer and layer site to ensure birds are reared in such a way as to reduce the stress at transition.

Section 3: Breeding Procedures

All keepers of laying hens

Paragraphs 28 and 29 of Schedule 1 to the Welfare of Farmed Animals (Scotland) Regulations 2010 state that:

28.—(1) Natural or artificial breeding or breeding procedures which cause, or are likely to cause, suffering or injury to any of the animals concerned **must not** be practised.

(2) Sub-paragraph (1) does not preclude the use of natural or artificial breeding procedures which are likely to cause minimal or momentary suffering or injury or that might necessitate interventions which would not cause lasting injury.

29. **No person may** keep an animal for farming purposes unless it can reasonably be expected, on the basis of its genotype or phenotype, that it can be kept without detrimental effect on its health or welfare.

221. Birds should come from balanced breeding programmes promoting and protecting health, welfare and productivity goals simultaneously. Identification of birds should be encouraged, to enable future feedback of information within the breeding pyramid and better application of breeding for welfare, based on data from the supply chain.

222. The presence of males in a layer breeder flock can reduce stress and fear responses due to the natural instinct for males to protect their females. However, too high a number of males in the flock can lead to sexual aggression and increased stress in the flock which can have negative impacts on welfare and health, including egg production. When producing hatching eggs from breeding birds, different bird strains will require a different cockerel to hen ratio. This is due to genetic differences in docility and sexual activity. Breeder suppliers should ensure they provide guidance on appropriate sex ratios, which ensure the production of sufficient fertilised eggs whilst minimising aggressive breeding behaviour.

223. Cockerel body condition should be assessed regularly throughout the laying cycle. Growth rates should follow the breeder growth recommendations provided by the supplier, because sperm production will be impacted if they grow too fast or if they lose body condition. Cockerels found in poor body condition should be removed and given additional feed, returning to the flock after being rested for a few weeks and when body condition has improved.

224. Cockerels displaying highly aggressive pecking or unacceptable behaviours, for example, repeatedly chasing and targeting the same hen for mating, may need to be temporarily removed from the flock. If unacceptable behaviour continues when the cockerel is returned, it should be humanely culled.

225. Husbandry measures and practices on the breeding farm should be designed to minimise floor eggs and heavily soiled eggs should not be sent as hatching eggs.

Littered nests are preferred by breeding females and may reduce the number of floor eggs if litter substrate is placed in a nest, whatever the base type.

226. Surplus chicks and in-shell embryos, including in hatchery waste, **must** be culled humanely by a trained and competent person and in accordance with the specific welfare at the time of killing legislation. The Humane Slaughter Association has produced a Code of Practice for the Disposal of Chicks in Hatcheries which sets out the humane options available. See Annex 3.

Annex 1: Legislation affecting laying hens and pullets

The main requirements are summarised below. This does not represent an exhaustive list and note that some legislation is regularly updated and / or amended. Much of the legislation referred to has already been amended by the date of publication of this guidance. Where legislation has been amended, the amended version of the legislation should be used.

All Scottish legislation and UK legislation which pertains to Scotland can be found at: <http://www.legislation.gov.uk/browse/scotland>

See also:

The Animal Health and Welfare (Scotland) Act 2006

The Welfare of Farmed Animals (Scotland) Regulations 2010

The Prohibited Procedures on Protected Animals (Exemptions) (Scotland) Regulations 2010.

Transport

For information on transporting laying hens, see:

- Council Regulation (EC) No 1/2005 on the protection of animals during transport and related operations
- The Welfare of Animals (Transport) (Scotland) Regulations 2006

Slaughter

For information on welfare at slaughter and killing laying hens, see:

- Council Regulation (EC) No 1099/2009 on the protection of animals at the time of killing (as amended by Commission Implementing Regulation (EU) 2018/723)
- The Welfare of Animals at the Time of Killing (Scotland) Regulations 2012
- The Welfare of Animals (Slaughter or Killing) Regulations 1995

Disease control and biosecurity

- See the Animal Health Act 1981.

Responsible medicines usage and record keeping

See the following:

- The Avian Influenza (Preventive Measures) (Scotland) Order 2007 requires those keeping 50 birds or more to register their flock with the Scottish Ministers (i.e. the poultry register operated by APHA on behalf of the Scottish Ministers).
- The Control of Salmonella in Poultry (Breeding, Laying and Broiler Flocks) (Scotland) Order 2009 requires certain records to be kept (including at hatcheries) and Salmonella testing to be carried out for breeding and laying flocks.
- The Diseases of Poultry (Scotland) Order 2003 amongst other things requires those keeping flocks of poultry of at least 250 birds on premises to keep certain records.
- The Veterinary Medicines Regulations 2013 require records to be kept on acquisition, usage, administration and disposal of medicines. Records **must** be kept for at least 5 years.

Note: The Welfare of Farmed Animals (Scotland) Regulations 2010 includes rules regarding the recording of what medicine is administered and when (for welfare purposes) and applies to all farm animals.

The Veterinary Medicines Regulations 2013 recording requirements describe in detail what **must** be recorded, how long the records **must** be kept and include the requirement for records of when and where medicines are acquired in addition to the requirement for records at the time of administration.

Record keeping requirements are additionally set out in

- Regulation 32 of the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015
- Commission Regulation (EU) No 37/2010 on pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin (as amended).

Animal by-products

For the requirements on storage, transport and disposal of animal by-products such as dead carcasses, manure and litter see:

- Regulation (EC) No 1069/2009 of the European Parliament and Council laying down health rules as regards animal by-products and derived products not intended for human consumption (as amended)
- Commission Regulation (EU) No 142/2011 implementing Regulation (EC) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption and implementing Council Directive 97/78/EC as

regards certain samples and items exempt from veterinary checks at the border (as amended)

The requirements are enforced by The Animal By-Products (Enforcement) (Scotland) Regulations 2013.

Annex 2: Permitted procedures

The mutilation of hens is banned under the Animal Health and Welfare (Scotland) Act 2006 unless the procedure is an exempt procedure. The Prohibited Procedures on Protected Animals (Exemptions) (Scotland) Regulations 2010 (as amended) exempt certain procedures from this ban, provided that they are carried out:

- for a purpose which is specified, in relation to any such procedure, in column 2 of the corresponding entry in the relevant schedule;
- in accordance with the relevant requirements in the Schedules;
- in such a way as to minimise the pain and suffering it causes to the animal;
- in hygienic conditions; and
- in accordance with good practice.

The following is an extract from the Prohibited Procedures on Protected Animals (Exemptions) (Scotland) Regulations 2010, setting out the permitted procedures for laying hens. The lists are correct at the point of publication.

Procedure	Purpose
Micro-chipping	Identification
Beak trimming	Flock welfare
<p>Conditions:</p> <p>1) Beak trimming of poultry may only be performed to prevent feather pecking and cannibalism and, in relation to laying hens kept on holdings of 350 or more and meat chickens kept on holdings of 500 or more, when the animals are less than 10 days old.</p> <p>2) Beak trimming of laying hens kept on holdings of 350 or more may only be performed using the infra-red procedure.</p> <p>3) In an emergency, to control an outbreak of feather pecking or cannibalism in laying hens, conditions 1 and 2 do not apply.</p>	
Laparoscopy	General animal management
Wing tagging	Identification, in connection with breeding or testing for the presence of disease.
Web tagging	Identification, in connection with breeding or testing for the presence of disease.

Annex 3: Sources of further information

Codes of recommendations of the Council of Europe

This guidance takes account of the Council of Europe recommendations concerning domestic fowl (*Gallus gallus*). These set out general principles of husbandry and care and include a section on laying hens. See <https://rm.coe.int/16805165ec>

General welfare information

For information on farm animal welfare, see the Farm Animal Welfare Council's report: Farm Animal Welfare in Great Britain: Past, Present and Future https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/319292/Farm_Animal_Welfare_in_Great_Britain_-_Past_Present_and_Future.pdf

Catching and Handling

For information on catching and handling, see:

- Humane Slaughter Association's guidance on the catching of poultry: <https://www.hsa.org.uk/catching-and-handling/chickens>
- Humane Slaughter Association's Poultry Catching and Handling Technical Note 15 [https://www.hsa.org.uk/shop/publications-1/product/-poultry-catching-and-handling-\(free-pdf\)](https://www.hsa.org.uk/shop/publications-1/product/-poultry-catching-and-handling-(free-pdf))

Transport

For information on handling and transport, see:

- Joint Industry Welfare Guide on the Handling and Transport of End-of-Lay Hens <http://www.britisheggindustryCouncil.co.uk/download/JIWGHLEHNB.pdf>
- Consortium of the Animal Transport Guides Project (2017). 'Good practices for animal transport in the EU: poultry' <http://animaltransportguides.eu/wp-content/uploads/2016/05/Animal-Transport-Guides-Poultry-2017.pdf>

Animal by-products

For further information on animal by-products, see:

<http://www.gov.scot/Topics/farmingrural/Agriculture/animal-welfare/ABPs>

Welfare outcome assessments

Advice on measuring welfare outcomes can be found at:

www.assurewel.org

Feather pecking

Featherwel provide advice on practical strategies to reduce feather pecking:

<https://www.featherwel.org/featherwel/injuriouspecking.html>

Culling

The Humane Slaughter Association has various publications providing useful advice on culling, including:

On-farm killing for disease control purposes:

<https://www.hsa.org.uk/on-farm-killing-of-livestock-for-disease-control-purposes--introduction/introduction-9>

Practical slaughter of poultry (useful for smallholders / crofters and other small-scale producers):

<https://www.hsa.org.uk/introduction-1/introduction-3>



Code of Practice for the Disposal of Chicks in Hatcheries:

<https://www.hsa.org.uk/shop/publications-1/product/code-of-practice-for-the-disposal-of-chicks-in-hatcheries>

Disease control and biosecurity

For advice on Avian influenza, see:

<https://www.gov.uk/government/publications/biosecurity-and-preventing-disease>

For information on the Salmonella National Control Programme, see:

<https://www.gov.uk/government/publications/the-uk-national-control-programme-for-salmonella-in-layers-gallus-gallus>

For the disease surveillance dashboards, see:

<http://apha.defra.gov.uk/vet-gateway/surveillance/scanning/disease-dashboards.htm>

Antimicrobials and vaccines

Guidance on the responsible use of antimicrobials and vaccines can be found at:

- <https://www.ruma.org.uk/poultry/>
- <https://www.farmantibiotics.org/progress-updates/progress-by-sector/egg-production/>

Contingency Planning

<https://www.gov.scot/policies/animal-health-welfare/animal-diseases/>

Egg marketing, trading and registration of egg laying flocks

For information on egg marketing, trading and registration, including exemptions for small producers with fewer than 350 birds, see: ★

- <https://www.gov.uk/guidance/eggs-trade-regulations>
- <https://www.ruralpayments.org/publicsite/futures/topics/inspections/all-inspections/egg-and-poultry-inspections>
- Scottish Government Poultry Officer contact: 0300 244 9972 or Eggs_and_Poultry_Mailbox@gov.scot

Registering poultry

APHA operate a poultry register on behalf of the Scottish Ministers. Guidance on registering poultry can be found at:

- www.gov.uk/guidance/poultry-registration#how-to-register

Scottish Government Poultry Unit

If you would like any further information, or if you would like to discuss this guidance, please contact the Scottish Government Poultry Unit in the first instance on 0300 244 9972 or eggs_and_poultry_mailbox@gov.scot.

These sources of information are current on the date that this guidance is published. You should be aware that any of the sources of information listed here could change.



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