



Llywodraeth Cymru
Welsh Government



Code of Practice for the Welfare of Meat Chickens and Meat Breeding Chickens

Contents

Preface	2
Introduction	6
Definitions	8
Section 1: Recommendations applying to all husbandry systems	9
Stockmanship and staffing	9
Catching and handling	10
Feed and water	11
Health	14
Inspection and humane culling	14
Monitoring and follow-up at the slaughterhouse	15
Disease control and biosecurity	16
Leg health	17
Buildings and accommodation	19
Ventilation, temperature and heat stress	19
Lighting	22
Litter	24
Automatic or mechanical equipment	24
Stocking density and freedom of movement	26
Mutilations	29
Beak trimming	30
Record Keeping	31
Contingency planning	32
Section 2: Additional recommendations for free range systems	33
Section 3: Additional recommendations for meat breeding and grandparent chickens	34
Breeding procedures	34
Feed and water	34
Aggression, injurious pecking and enrichment	36
Beak trimming	36
Buildings and accommodation	36
Stocking density and freedom of movement	37
Litter	37
Catching, handling and transport	38

Annex 1: Other legislation affecting meat chickens, meat breeding birds and hatcheries	39
Transport	39
Slaughter	39
Free range and organic systems	39
Food hygiene	39
Record keeping	39
Animal by-products	40
Annex 2: Form to be used to notify APHA of a change in stocking density of conventionally reared meat chickens	41
Annex 3: Trigger levels	42
Annex 4: Cumulative Daily Mortality Rate (CDMR): worked example	43
Annex 5: Permitted procedures	45
Sources of further information*	47
Slaughter	47
Catching and handling	47
Antimicrobials and vaccines	47
Registering poultry	47

Preface

This preface is not part of the code; instead, it explains the code's role and the broad considerations on which it is based.

This code applies to Wales only. It replaces the Code of Recommendations for the Welfare of Livestock: Meat Chickens and Breeding Chickens, issued in 2002. It also replaces the interim guidance for keepers of conventionally reared meat chickens in relation to the Welfare of Farmed Animals (Wales) Regulations 2007 as amended by the Welfare of Farmed Animals (Wales) (Amendment) Regulations 2010.

The legal text in boxes throughout this document is not part of this Code but highlights relevant legislation. The text in these boxes is the law as it stands on the date that this Code is published (please see the final page for the date of the 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.

This Code is made under the Animal Welfare Act 2006. The Act makes owners and keepers responsible for ensuring that the welfare needs of their animals are met, have a suitable environment, are fed an appropriate diet and are protected from pain, injury, suffering and disease.

The principle legislation referred to in this code are the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) and the Mutilations (Permitted Procedures) (Wales) Regulations 2007, which implement Council Directive 98/58/EC concerning the protection of animals kept for farming purposes and Council Directive 2007/43/EC which lays down the minimum rules for the protection of chickens kept for meat production.

Section 14 of the Animal Welfare Act 2006 states:

- 14 (1) The appropriate national authority may issue, and may from time to time revise, codes of practice for the purpose of providing practical guidance in respect of any provision made by or under this Act.
- (2) The authority responsible for issuing a code of practice under subsection (1) shall publish the code, and any revision of it, in such manner as it considers appropriate.
- (3) A person's failure to comply with a provision of a code of practice issued under this section shall not of itself render him liable to proceedings of any kind.
- (4) In any proceedings against a person for an offence under this Act or an offence under regulations under section 12 or 13 –
 - (a) failure to comply with a relevant provision of a code of practice issued under this section may be relied upon as tending to establish liability, and
 - (b) compliance with a relevant provision of such a code of practice may be relied upon as tending to negative liability.

Section 3 of the Animal Welfare Act 2006 states:

- 3 (1) In this Act, references to a person responsible for an animal are to a person responsible for an animal whether on a permanent or temporary basis.
- (2) In this Act, reference to being responsible for an animal include being in charge of it.

- (3) For the purposes of this Act, a person who owns an animal shall always be regarded as being a person who is responsible for it.
- (4) For the purposes of this Act, a person shall be treated as responsible for any animal for which a person under the age of 16 years of whom he has actual care and control is responsible.

Regulation 6 of the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- (1) A person responsible for a farmed animal-
- (a) must not attend to the animal unless he is acquitted with any relevant code of practice and has access to the code while attending to the animal: and
 - (b) must take all reasonable steps to ensure that a person employed or engaged by him does not attend to the animal unless that other person-
 - (i) is acquainted with any relevant code of practice;
 - (ii) has access to the code while attending to the animal; and
 - (iii) has received instruction and guidance on the code.
- (2) In this section, a 'relevant code of practice' means a code of practice issued under section 14 of the Animal Welfare Act 2006 or a statutory welfare code issued under section 3 of the Agriculture (Miscellaneous Provisions) Act 1968 relating to the particular species of farmed animal to which a person is attending.

This code is intended to help all those who care for meat chickens and meat breeding chickens to practice a good standard of stockmanship.

Without good stockmanship, animal welfare can never be adequately protected. Adherence to these recommendations will help keepers to maintain the standards required in order to comply with legislation.

Those who care for chickens should demonstrate:

- Caring and responsible planning and management
- Skilled, knowledge and conscientious stockmanship
- Appropriate environmental design
- Considerate handling and transport
- Humane slaughter

The welfare of meat chickens and meat breeding chickens is considered within a framework that was developed by the Farm Animal Welfare Committee (FAWC) and known as the 'Five Freedoms'. These 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 should be considered in conjunction with FAWC's three essentials of stockmanship.

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 of Fear and Distress** by ensuring conditions and treatment to avoid mental suffering.

The Three Essentials of Stockmanship are:

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.

During on-farm welfare inspections carried out by the Animal and Plant Health Agency (APHA, exercising Welsh Minister functions) and Local Authorities, inspectors will assess compliance against legislation and this Code. Not complying with the welfare-related legislation outlined in the boxes throughout this Code is an offence. In cases that go to court for prosecution, whether someone has met the requirements of this Code, or not, can be used to help establish a person's liability.

There may be other legislation and requirements which are not outlined in this Code but that you must be familiar with and comply with.

Section 4 of the Animal Welfare Act 2006 states:

- (1) A person commits an offence if-
 - (a) an act of his, or a failure of his act, causes an animal to suffer
 - (b) he knew, or ought reasonably to have known, that the act, or failure to act, would have that effect or to be likely do so,
 - (c) the animal is a protected animal, and
 - (d) the suffering is unnecessary.

- (2) A person commits an offence if-
 - (a) he is responsible for an animal,
 - (b) an act, or failure to act, of another person causes the animal to suffer,
 - (c) he permitted that to happen or failed to take such steps (whether by way of supervising the other person or otherwise) as were reasonable in all the circumstances to prevent that happening, and
 - (d) the suffering is unnecessary
- (3) The considerations to which it is relevant to have regard when determining for the purposes of this section whether suffering is unnecessary include-
 - (a) whether the suffering could reasonably have been avoided or reduced;
 - (b) whether the conduct which caused the suffering was in compliance with any relevant enactment or any relevant provisions of a license or code of practice issued under an enactment;
 - (c) whether the conduct which caused the suffering was for a legitimate purpose, such as-
 - (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 all the circumstances that of a reasonably competent and humane person.

- (4) Nothing in this section applies to the destruction of an animal in an appropriate and humane manner.

Section 9 of the Animal Welfare Act 2006 states:

- (1) A person commits an offence if he does not take such steps as are reasonable in all the circumstances to ensure that the needs of an animal for which he is responsible are met to the extent required by good practice.
- (2) For the purposes of this Act, an animal's needs shall be taken to 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, and
 - (e) its need to be protected from pain, suffering, injury and disease.

Suggested sources of additional information are included at the end of this Code. These sources of further information are relevant to the welfare of meat chickens and meat breeding chickens but are for information only and should not be considered to be part of the Code of Practice.

This Code has been issued by the Minister for Environment, Energy and Rural Affairs.

Introduction

This Code (which applies in Wales only) covers all parts of the meat chicken production sector, including breeding birds and grandparent stock under all types of husbandry systems.

Legal text in the boxes has been colour coded. The welfare requirements for all meat chicken producers are in blue, and the additional welfare requirements for keeping conventionally reared meat chickens are in red. The additional requirements for conventionally reared meat chickens (required by the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) do not apply to hatcheries or when fewer than 500 chickens or meat breeding chickens are kept; they also do not apply where

birds are reared to extensive indoor, free range or organic marketing standards. Although not a legal requirement, the additional welfare provisions for conventionally reared meat chickens, for example on lighting and litter, can help to ensure bird welfare when applied to all systems of production. The Council of Europe's recommendations concerning meat chickens and grandparent stock, where not covered in legislation, are included in this Code.

For ease of reference, the table below summarises the various legal provisions relating to animal welfare on farm for different types of meat chicken production systems.

Type of meat chicken production system	Animal Welfare Act 2006	Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) Schedule 1	Welfare of farmed Animals (Wales) regulations 2007 (as amended) Schedule 5A
Holdings with <500 chickens	✓	✓	
Meat breeding chickens	✓	✓	
Hatcheries	✓	✓	
>500 birds conventionally reared, stocking density up to 33kg/m ²	✓	✓	✓
>500 birds conventionally reared, stocking density more than 33kg/m ² up to 39kg/m ²	✓	✓	✓
^a Free range chickens, maximum stocking density 27.5kg/m ²	✓	✓	
^a Extensive indoor chickens, maximum stocking density 25kg/m ²	✓	✓	
^b Organically reared chickens, maximum stocking density 21kg/m ²	✓	✓	

a. As referred to in points (b), (c), (d), (e) of Annex V to Commission Regulation (EC) No 543/2008 which sets out detailed rules in regards to the marketing standards for poultry meat for the application of the Single CMO Regulation (EC) No 1308/2013.

b. In accordance with the relevant EU Organic Regulations – Council Regulation (EC) No 834/2007 and Commission Regulation (EC) No 889/2008.

No person should operate or set up a meat chicken or meat breeding chicken unit unless the welfare of all the birds can be safeguarded to the fullest extent possible. 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.

The relevant animal welfare legislation applies to owners as well as any person looking after the chickens on their behalf, wherever the chickens 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.

Paragraph 29 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 states:

29. Animals may only be kept for farming purposes if it can reasonably be expected, on the basis of their genotype or phenotype, that they can be kept without any detrimental effect on their health or welfare.

The strains of bird selected must be suitable for the production system. In particular, care must be taken in the production of birds with extended growing periods (for example organic, free range etc.) to use suitable strains and required feeding regimes.

Definitions

For the purposes of this Code definitions of terms used in this Code 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 Code.

‘breeding chicken’ means an animal of the species *Gallus gallus* whose progeny are either parent stock or meat chickens

‘conventionally reared meat chicken’ means an animal of the species *Gallus gallus* that is kept for meat production, other than one:

- (a) that is on a holding with fewer than 500 such animals or with only breeding stocks of such animals
- (b) that is on a hatchery
- (c) in relation to which the term “Extensive indoor (barn reared)”, “Free range”, “Traditional free range” or “Free range – total freedom” can be used within the meaning of point (b), (c), (d) or (e) of Annex V to Commission Regulation 543/2008/EC which sets out detailed rules as regards the marketing standards for poultry meat for the application of the Single CMO Regulation (EU) 1308/2013, or
- (d) that is organically reared in accordance with the relevant EU organic regulations – Council Regulation 834/2007/EC and Commission Regulation (EC) 889/2008.

‘cumulative daily mortality rate’(*) means the sum of daily mortality rates

‘daily mortality rate’(*) means the number of chickens which have died in a house on the same day, including those that have been culled either for disease or because of other reasons, divided by the number of chickens present in the house on that day, multiplied by 100

‘flock’(*) means a group of chickens which are placed in a house of a holding and are present in this house at the same time

‘grandparent stock’ means an animal of the species *Gallus gallus* whose progeny are parent stock

‘holding’(*) means a production site on which chickens are kept

‘house’(*) means a building on a holding where a flock of chickens are kept

‘injurious pecking’ is redirected foraging behaviour to the feathers and skin of other birds and encompasses gentle and severe pecking, vent pecking and cannibalism

‘keeper’(*) means any natural or legal person responsible for or in charge of chickens in terms of contract or by law whether on a permanent or temporary basis

‘laparoscopy’ is the examination of the abdominal cavity by insertion of an instrument called a laparoscope

‘meat chicken’ means an animal of the species *Gallus gallus* kept for meat production

‘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

‘owner’(*) means any natural or legal person or persons owning the holding where chickens are kept

‘parent stock’ means an animal of the species *Gallus gallus* whose progeny are meat chickens

‘stocking density’(*) means the total live weight of chickens in kg which are present in a house at the same time per square metre of usable area

‘total mortality rate’ is the total number of birds that died or were culled during a flock’s whole rearing period, divided by the original number of birds placed on the first day, multiplied by 100

‘usable area’(*) means, in relation to conventionally reared meat chickens, a littered area accessible to the chickens at any time.

Section 1: Recommendations applying to all husbandry systems

Stockmanship and staffing

All meat chickens – including breeding birds and those at hatcheries

Paragraph 1 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

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

Conventionally reared meat chickens

Paragraph 2 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

2. (1) A keeper must hold a certificate recognised by the Welsh Ministers for the purposes of Article 4(3) or (4) of Council Directive 2007/43/EC (3) (certificates of completion of training courses or equivalent experience).
- (2) The Welsh Ministers must publish from time to time, in such a way as the Welsh Ministers consider appropriate, a list of certificates recognised by the Welsh Ministers for the purposes of sub-paragraph (1).

Stockmanship is one of the most important influences on the welfare of chickens. It is essential that sufficient well-motivated and competent personnel are employed to carry out all necessary tasks. Staff should be well managed and supervised, fully conversant with the tasks they will be required to undertake and competent in the use of any equipment.

Keepers of all meat chickens, meat breeding birds and those handling birds in hatcheries, including those employed by contractors, should be appropriately trained before being given responsibility for animals. This requires the acquisition of specific stockmanship skills which may be developed on-site with an experienced person or by a suitable training provider and in some cases may include in-class training.

All keepers should have a full and demonstrable understanding of the welfare needs and basic biology of the birds.

As a minimum, they should be able to:

- recognise whether or not the birds are in good health
- understand the significance of behavioural changes in the birds, and
- appreciate the suitability of the total environment for the birds' health and welfare.

Whilst under the supervision of others and before being given sole responsibility for animals, keepers should have demonstrated competence and understanding, including on-farm practical ability, to ensure that they are capable of safeguarding birds under all foreseeable conditions. A good keeper will have a compassionate and humane attitude, will be able to anticipate and avoid many potential welfare problems and have the ability to identify those that do occur and respond to them promptly.

In order for birds to become accustomed to the stockman's presence without fear, there should be frequent, quiet but close approach from an early age so that birds are not unduly frightened.

Young birds should be given appropriate early experience of management practices and environmental conditions to enable them to adapt to the husbandry systems that they will encounter later in life. For example, early exposure to particular feeding, watering systems, natural light, perches and litter may be beneficial.

Meat chickens bred for farming purposes should not be used to achieve any other purpose, including public spectacles or demonstrations, if such use is likely to be detrimental to their health or welfare.

All keepers who are given responsibility for the care of conventionally reared meat chickens at any point in time, including holiday cover, part time and temporary staff, must have a certificate attesting to completion of a recognised training course or have been granted Grandfather Rights under the Defra scheme (now closed for new applications). The training course must cover in particular the areas covered by Annex IV to Council Directive 2007/43/EC:

- (a) Annexes I and II
- (b) physiology, in particular drinking and feeding needs, animal behaviour and the concept of stress
- (c) the practical aspects of the careful handling of chickens and catching, loading and transport
- (d) emergency care for chickens, emergency killing and culling, and
- (e) preventive bio-security measures.

These are areas in which all flock keepers, regardless of system of production, should receive training. The minimum qualification sufficient to comply with the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) is the Level 2 diploma in Work-based Agriculture (Poultry Production), ensuring that the mandatory units have been completed. Qualifications approved

in other administrations within the UK and in other countries may also be recognised by Defra, for example the Level 3 in Northern Ireland Diploma in Work-based Agriculture (Poultry Production) and the SVQ Level 2 Agriculture (Poultry) in Scotland.

Owners and keepers of chickens under all husbandry systems, including those with Grandfather Rights, are encouraged to take formal training regularly to keep their knowledge and skills up to date.

Training should continue throughout the duration of employment of all keepers, and suitable refresher courses should be undertaken regularly. Wherever possible, the training should be of a type which leads to formal recognition of competence. As welfare risks may vary according to the rearing system, such training should be specific to the system used.

Catching and handling

The catching and handling of birds without causing them injury or stress requires skill. 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 or keeper. Responsibility for the management of the operation should be clearly allocated. All those in contact with birds should comply with the required biosecurity as stipulated by the owner/keeper. (See page 17.)

Mechanical bird collection systems may have advantages for welfare. Only systems that the manufacturer has shown to be satisfactory from the point of view of bird health and welfare should be used. Where they are utilised, operators must be competent in their use and be vigilant for signs of stress or smothering, just as with manual catching. Such systems should be regularly monitored and their effect on bird health and welfare regularly evaluated.

High standards must be applied during catching and handling irrespective of the potential economic value of the birds. Surplus meat chickens, including breeders at the end of lay awaiting disposal, should be treated as humanely as those intended for retention or sale.

Catching and handling should be carried out quietly and confidently exercising care to avoid unnecessary struggling which could bruise or otherwise injure the birds. Panic among the birds should be avoided in order to minimise the risk of injury. Catching should take place in low or blue light to minimise fear responses. The light should be returned to a minimum of 20 lux without delay if any birds remain in the house after thinning. A gradual increase in light intensity at this time, similar to a dawn or dusk period, could reduce the risk of back scratching. Where there is concern that returning the lights to 20 lux will result in compromised bird welfare, a temporary reduction in lighting level is permitted on a case by case basis, but only as a result of following veterinary advice on each occasion. (See page 23.)

Birds must be caught with care and should be lifted directly into the transport module. Catching should either be by holding them around the body, or, if by the legs then by both legs. If birds need to be carried, this should either be by holding them around the body or by both legs. No catcher should carry by the legs more than three chickens (or two adult breeding birds) in each hand. Birds must not be carried by the wings or by the neck.

Feed and water

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 22 to 27 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

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 that contains any substance that may cause them unnecessary suffering or injury and must be provided with food and liquid in a manner that does not 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 his 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. (1) No other substance, with the exception of those given for therapeutic or prophylactic purposes or for the purpose of zotechnical treatment, may be administered

to animals unless it has been demonstrated by scientific studies of animal welfare or established practice that the effect of that substance is not detrimental to the health or welfare of the animals.

Conventionally reared meat chickens

Paragraph 6 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- 6 (1) Drinkers must be positioned and maintained in such a way that spillage is minimised.
- (2) Feed must be either continuously available or meal fed.
- (3) Feed must not be withdrawn from chickens more than 12 hours before the expected slaughter time.

All birds, including breeding birds, must have daily access to feed. When introducing birds to a new environment, the keeper should ensure that the birds can easily find feed and water.

Suitable, correctly balanced nutrition, designed specifically for the age and strain of the bird, is important for rearing healthy meat chickens. Feed management practices should incorporate nutritional guidance for strain type provided by the breeder's recommendations and company supplying the birds, in addition to any veterinary advice, to avoid development of certain conditions such as ascites, sudden death syndrome and lameness.

Whilst environment and genetics should also be considered as part of managing the conditions listed in the above paragraph, control of growth rate by careful nutrient management, whilst not impacting overall on final body weight, may reduce their incidence. However, any changes in diet quantity or quality should be managed collaboratively with nutrition specialists and veterinary advisers.

Any changes in diet should be introduced gradually and with appropriate veterinary/ specialist advice. Sudden changes in the type, quantity and make-up of feed should generally be avoided.

Feed and water should be replaced on a regular basis to ensure it does not become stale or contaminated. Suitable provision must be made for supplying water in freezing weather conditions.

The distance any bird should have to travel in a house to reach feed should not be more than 4 metres and to reach water should not be more than 3 metres. However, in some situations, such as some outdoor production systems, it may be necessary for the birds to travel further. In these situations, all birds must be adequately cared for with necessary adaptations made to the stocking density, feeding and drinking space, and the distribution of feeders and drinkers, to allow for such movements.

Feed must not be withheld from conventionally reared meat chickens for more than 12 hours before expected slaughter time. Prior to transport, water should be provided up to the start of the catching procedure. Transporters of meat and breeding chickens must minimise the length of the journey and carry out transport without delay.

Provided chicks arrive at their destination within 72 hours after hatching and the journey time is not more than 24 hours, then feed and water need not be provided in transit. However, if any of these periods are exceeded then feed and water must be provided.

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

Daily access to 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.

Leakage or spillage from the water drinkers can significantly increase the moisture content of the litter with a negative impact on litter quality and thus bird health. Leaks should therefore be fixed as soon as possible. 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. (See page 24)

Health

Inspection and humane culling

All meat chickens – including breeding birds and those at hatcheries

Paragraph 2 (1) and (2) of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- 2 (1) ...animals kept in husbandry systems in which their welfare depends on frequent human attention must be thoroughly inspected at least once a day to check that they are in a state of well-being.
- (2) ...animals kept in husbandry systems in which their welfare does not depend on frequent human attention must be inspected at intervals sufficient to avoid any suffering.

Paragraph 3 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

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

A health and welfare plan should be implemented for each farm which should set out health and husbandry activities covering the whole of the production cycle. The plan should be developed with appropriate veterinary advice, regularly reviewed against performance and updated accordingly, at least annually.

The 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.

The plan should also include the use of welfare outcome assessments to assess and monitor the ongoing welfare of the birds on the farm. Welfare outcomes are measured at the slaughterhouse as part of the trigger system (see page 16).

Conventionally reared meat chickens

Paragraph 11 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- 11 (1) A keeper must ensure that all chickens kept on the holding are inspected at least twice a day.
- (2) Special attention must be paid to signs indicating a reduced level of animal health or welfare.
- (3) Chickens that are seriously injured or show evident signs of health disorder (including those having difficulties in walking, severe ascites or severe malformations), and are likely to suffer, must receive appropriate treatment or be culled immediately.

As part of the plan, keepers should establish in advance the best course of action to take should problems be identified and ensure that veterinary and other expert advice is available when needed.

In the case of conventionally reared meat chickens, a systematic inspection of all flocks must be undertaken at least twice each day at appropriate intervals, in order to reduce the risk of a welfare problem developing. It is recommended that keepers of all other meat and breeding chickens carry out such an inspection at least twice a day. Young birds, in the first few days of life, should be inspected at least three times a day.

Flock inspection should include an assessment of body condition, any growth variation within the flock, locomotion, gait, respiration, 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. Any departure from the norm may indicate a problem which should be given immediate remedial attention.

In order to ensure a thorough inspection, the keeper should walk close enough to every bird to encourage it to move, taking care not to frighten the birds with sudden, unaccustomed movement, noise or changes in light levels. The aim should be to pass close enough to the birds to see them clearly and for them to be disturbed and so move away. This will enable the identification of any individual that is sick, injured or weak for appropriate action to be taken by the keeper.

Health and welfare inspections may be linked with other visits to the poultry houses but each inspection should be undertaken as a separate, specific procedure.

Light levels during inspection must be sufficient to ensure that the birds being inspected are clearly visible during that inspection.

While it may not be generally possible to examine each bird individually during routine inspection, a good indication of flock health should be gained on each occasion. Where birds are not being fed on ad lib diets, inspection is particularly effective at feeding time when any birds which are not fit will be slow to feed and can be identified. Individual examination should be made of those birds for which the overall inspection indicates this to be necessary.

Chickens that are injured or show signs of health disorder (including those having difficulties in walking, or reaching food or water, or that have severe ascites or severe malformations), and are likely to suffer, must receive appropriate treatment or be

humanely culled immediately. Dead birds seen during an inspection should be removed from the house without delay and disposed of appropriately.

When any bird is killed at a hatchery or on farm this must be carried out using a permitted method in accordance with the relevant legislation and the procedures included in the health and welfare plan.

Monitoring and follow-up at the slaughterhouse

Conventionally reared meat chickens

Paragraphs 14 and 15 of Part 3, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

- 14 (1) For the purposes of Section III (food chain information) of Annex II to Regulation 853/2004, the daily mortality rate and cumulative daily mortality rate and the hybrid or breed of chickens from a flock with a stocking density in excess of 33 kilograms per m² of usable area is treated as relevant food safety information.
- (2) A food business operator operating a slaughterhouse must –
 - (a) under the supervision of the official veterinarian, record the number of chickens from such a flock that are dead on arrival at the slaughterhouse; and
 - (b) provide that information on request to the official veterinarian.
- 15 (1) An official veterinarian conducting controls under Regulation 854/2004 in relation to chickens must evaluate the results of the post-mortem inspection to identify possible indications of poor welfare conditions in their holding or house of origin.

- (2) If the mortality rate of the chickens or the results of the post-mortem inspection are consistent with poor animal welfare conditions, the official veterinarian must communicate the data to the keeper of those chickens and to the Welsh Ministers without delay.

All meat chickens undergo ante and post-mortem assessment at the slaughterhouse. For conventionally reared meat chickens the results of these assessments are fed into the “trigger system” which was designed in collaboration with Defra, the meat chicken industry, independent poultry veterinary surgeons, welfare organisations and delivery bodies, and has been operating in slaughterhouses since 2010. The system monitors all batches of conventionally reared meat chickens and uses the results of post-mortem inspections carried out at the slaughterhouse to identify possible welfare problems on farm.

The post-mortem conditions currently monitored by the system are listed in Annex 3. The system involves two processes:

Process 1 is designed to identify situations where levels of a condition are exceptionally high, and Process 2 is designed to identify situations where mortality levels are unusually high and, additionally, where the levels of a range of other conditions are above average. Different pre-defined thresholds, known as “trigger levels”, exist for these two processes.

When these thresholds are exceeded, a trigger report is generated and sent to the owner/keeper of the birds. The owner/keeper should consider how best to reduce these levels in future flocks and, where appropriate, seek advice from a veterinary surgeon or another specialist. APHA uses the trigger report information to identify farms at highest risk of non-compliance with animal welfare legislation, and targets inspections to those farms identified as being at highest risk.

Keepers of conventionally reared meat chickens reared above a stocking density of 33 kg/m² of usable area must provide the cumulative daily mortality rate (CDMR) of each house of birds and the hybrid or breed of those birds on the food chain information report. All keepers of conventionally reared meat chickens are encouraged to provide these data as well as the stocking density of the birds at the point of depopulation. CDMR is defined as the sum of daily mortality rates. The daily mortality rate is the number of chickens that have died in a house on the same day, including those that have been culled either because of disease or other reasons, divided by the number of chickens present in the house on that day, multiplied by 100.

The total mortality (i.e. the number of deaths and culls recorded throughout the production cycle divided by the number of birds placed, expressed as a percentage) and cumulative daily mortality figures should not be far apart, but if thinning takes place or if the mortality is high, then the two figures could be quite different. A worked example is provided in Annex 4.

Disease control and biosecurity

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 5 and 6 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

5. Any animals which appear to be ill or injured must be cared for appropriately and without delay; where they do not respond to such care, veterinary advice must be obtained as soon as possible.
6. Where necessary, sick or injured animals must be isolated in suitable accommodation with, where appropriate, dry comfortable bedding.

Conventionally reared meat chickens

Paragraph 12 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

12. After the final depopulation of a house and before a new flock is introduced –
- (a) any part of a house, and any equipment or utensil, which has been in contact with chickens must be thoroughly cleaned and disinfected; and
 - (b) all litter must be removed and clean litter provided.

A disease challenge may first be noticed by a change in water consumption, a reluctance to eat, changes in droppings, changes in litter quality or in the general behaviour of the flock. A marked change in water use should be thoroughly investigated. Veterinary attention should be sought at an early stage in any outbreak of disease so that the cause can be determined and appropriate action taken.

Measures to control diseases caused by external parasites should be taken by using the appropriate parasiticides. It is particularly important to take measures to prevent the establishment of red mite infestation in breeding chicken flocks. These measures must not cause harm to the birds.

All those in contact with birds should practice strict hygiene regarding footwear changes or disinfection and hand washing procedures, in particular when moving between each house, to limit potential introduction and spread of disease. If farm staff keep their own 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. Where possible, waterfowl (i.e. geese and ducks) should be kept separate from other poultry species.

It is recommended that the site be managed so that all houses are empty at the same time to facilitate effective cleaning, disinfection and disinfestation. An “all in – all out” approach with periods when there are no birds on site will also act to provide a disease break. Where multi-age sites are unavoidable, they should be managed according to a regular routine in which the youngest flocks are attended to first, and so on, through to the oldest.

Once empty, bird accommodation should be first dry cleaned to remove organic material, washed and then disinfected. Used litter from conventionally reared meat chickens must be removed from the house and should be removed from the site before re-stocking so as to reduce the risk of carryover of disease. This practice should also be followed for all other meat chickens and breeding birds.

When planning new sites, consideration should be given to providing the maximum possible distance between the proposed site and existing sites to improve biosecurity. A useful guide is the 3km 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, along with the proximity to wild bird sources. (See page 19.)

Inspectors should, wherever possible, 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.

Leg health

Leg disorders with associated lameness can be a key cause of poor welfare in meat chickens. There are many causes of leg disorders leading to poor leg health including those linked to nutrition, microbial infection and genetics. Nutritional deficiencies and imbalances including calcium, phosphorus and vitamin D

can lead to an increase in bone deformities and lameness. Lameness can also be caused by bone or joint infection, so effective prevention and control of viral and bacterial disease plus good litter management are essential.

Welfare and health considerations, in addition to productivity, should be taken into account when choosing a strain for a particular purpose or production system. In line with this, meat chickens should stem from broad breeding programs, which promote and protect health, welfare and productivity. Keeping birds in line with appropriate growth curves that optimise these criteria, particularly with regard to leg health, should be considered.

Keepers should monitor all birds for signs of lameness, leg weakness or abnormal gait on a daily basis as part of the inspection process. When recording mortalities and culls it is useful to record the cause so that lameness can be monitored within and between flocks. For conventionally reared meat chickens, the cause for culls must be recorded and any bird which is suffering should be humanely culled without delay.

Keepers should be particularly vigilant when the risk of lameness is highest, such as towards the end of the production cycle and during the summer months when bird activity may be at its lowest.

Certain management practices can limit or reduce the risk of lameness in a flock. Increasing the activity of meat chickens in the day and encouraging proper rest at night, for example through manipulation of the lighting patterns (increasing light intensity during light periods combined with a longer uninterrupted dark period), can help prevent lameness. Increased activity during the day can also be achieved by enriching the environment, reducing stocking density and the provision of natural light.

If leg disorders develop, management and husbandry practices must be immediately assessed. Any changes required should be instigated as soon as practically possible and where appropriate following veterinary and technical advice of the breed supplier.

If a problem arises with managing litter and bird health, the farmer may choose to grow meat chickens below their maximum performance by making changes to the feed composition, feed structure and feeding routine. This should be carried out with appropriate consideration of the implications for the bird and with appropriate veterinary and technical advice. In addition, the effects of dietary change on litter condition should be closely monitored.

Lameness may develop as a result of infections acquired in the parent flock or hatchery. High standards of biosecurity and hygiene in the parent flock, in the handling of the eggs, at the hatchery and in subsequent handling and transport of the chicks should be maintained.

Prior to crating and loading, an assessment of birds' fitness to travel must be undertaken. Careful consideration should be given by the keeper as to whether any lame birds are legally fit to travel for the proposed journey. If they are not, they should be humanely culled on farm. Birds with severe and painful conditions such as advanced plantar necrosis are unfit for transport. Small or emaciated birds that are likely to be culled on arrival at the slaughterhouse should not be transported but be culled on farm at the time of depopulation.

Buildings and accommodation

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 11 and 12 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

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 must be constructed and maintained so that there are no sharp edges or protrusions likely to cause injury to them.

Advice on health and welfare aspects should be sought from a knowledgeable advisor and veterinary surgeon before any new buildings are planned or when existing buildings are modified. It is important to ensure that the design of housing and equipment is suitable for the intended use. New methods of husbandry equipment or accommodation for meat and meat breeding chickens are available, for example the use of biomass and underfloor heating. New technologies should only be used when comprehensively tested and found satisfactory for bird health and welfare. Consideration should be given to avoiding the incorporation of equipment which could pose a significant risk of introduction and spread of disease between houses or between farms.

When new accommodation for meat and meat breeding chickens is planned, a suitable site should be selected taking into consideration the risks from outside environmental factors such as noise, light, vibration and atmospheric pollution and from predators.

Where appropriate, advantage should be taken of natural features to provide shelter and to protect birds from predators, rodents and other animals. (See page 17.)

Ventilation, temperature and heat stress

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 13 and 18 to 21 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

13. Air circulation, dust levels, temperature, relative air humidity and gas concentrations must be kept within limits which are not harmful to the animals.
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 defects in automated or mechanical equipment of the type referred to in paragraph 18 are discovered, these must be rectified immediately or, if this is impossible, appropriate steps must be taken to safeguard the health and well-being of the animals pending the rectification of those 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 the 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 at least once every seven days in order to check that there is no defect, and, if any defect is found at any time, it must be rectified immediately.

Conventionally reared meat chickens

Paragraph 8 (1) and (2) of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- 8 (1) Ventilation must be sufficient to avoid overheating.
- (2) Ventilation, in combination with heating systems, must be sufficient to remove excessive moisture.

For birds being stocked at the higher densities (i.e. above 33kg/m²) paragraph 5 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states in addition to paragraph 8 (1) and (2):

- 5. The keeper must –
 - (a) maintain and, on request, make available to the Welsh Ministers, documentation in the house giving a detailed description of the production systems, in particular information on technical details of the house and its equipment, including –
 - (i) a plan of the house including the dimensions of the surfaces occupied by the chickens;

- (ii) ventilation and any relevant cooling and heating system (including their location), and a ventilation plan, detailing target air quality parameters (such as airflow, air speed and temperature);
- (iii) feeding and watering systems (and their location);
- (iv) alarm and backup systems in the event of a failure of any equipment essential for the health and well-being of the chickens;
- (v) floor type and litter normally used; and
- (vi) records of technical inspections of the ventilation and alarm systems;

- (b) keep up to date the documentation referred to in subparagraph (a);
- (c) ensure that each house is equipped with ventilation, and if necessary, heating and cooling systems designed, constructed and operated in such a way that –
 - (i) the concentration of ammonia does not exceed 20 parts per million and the concentration of carbon dioxide does not exceed 3,000 parts per million, when measured at the level of the chickens' heads;
 - (ii) when the outside temperature measured in the shade exceeds 30°C, the inside temperature does not exceed the outside temperature by more than 3°C; and
 - (iii) when the outside temperature is below 10°C, the average relative humidity measured inside the house during a continuous period of 48 hours does not exceed 70%.

Ventilation rates, air distribution and house conditions must at all times be adequate to provide sufficient fresh air appropriate for the age of the birds, without draughts, and keep the litter dry and friable. Air quality, including dust level and concentrations of carbon monoxide, should be controlled and kept within limits where the welfare of the birds is not negatively affected.

The ventilation appropriate to the growth profile of the flock should be documented and available as guidance for the keeper.

Chicks should be placed in a pre-heated house or with brooders when they arrive and their behaviour monitored carefully. Young chicks are particularly susceptible to extremes of temperature and an even distribution of the chicks in the house will indicate that they are thermally comfortable. After 4-5 weeks birds can tolerate a fairly wide range of temperatures but every effort should be made to avoid creating conditions which will lead to chilling, huddling and subsequent smothering. In addition, low temperatures have been associated with increased susceptibility to conditions such as ascites.

In less well insulated buildings stocked at the higher densities, additional heat, coupled with a higher level of ventilation, may be required to reduce relative humidity levels below 70%.

Birds should not be exposed to strong, direct sunlight or hot, humid conditions long enough to cause heat stress as indicated by prolonged panting. Housing affects the birds' ability to maintain their normal body temperature but under any management system ambient temperatures high enough to cause prolonged panting may occur, particularly when humidity is relatively high. All accommodation should therefore be designed so that its ventilation is adequate to protect the birds from overheating under any weather conditions that can reasonably be foreseen. Attention should be paid to air throughput, distribution and

especially increasing air speed at bird level during periods of hot weather.

Owners and keepers should plan ahead to avoid heat stress. It is their responsibility to ensure that appropriate measures are taken, based on the design of the building, its locality and the predictable maximum temperature/humidity, to avoid heat stress. During periods of high temperatures and humidity, consideration should be given to reducing the planned stocking density at the time of ordering or placing day-old chicks.

During hot and humid conditions, the birds should be checked more frequently, but not disturbed unduly.

Portable back-up fans can help to increase ventilation during periods of hot and humid weather. The air temperature within a building may be reduced by improved insulation and the correct use of evaporative cooling of incoming air, taking care to avoid a combination of high temperature and high humidity. Spraying of cold water on the roof should be considered as a last resort and only when temperature and humidity levels are excessive. The heat output of the birds may be reduced by lowering stocking density or changing the feeding patterns.

Additional ventilation requirements for conventionally reared meat chickens stocked above 33 kg/m²

For flocks stocked at densities in excess of 33 kg/m², it is suggested that an air speed of at least 1 m/second be provided over as much of the floor area as is possible in conventionally ventilated buildings. In buildings with tunnel ventilation capability, the suggested air speed is at least 2 m/second. For naturally ventilated buildings, inlets and outlets should be sufficiently large to allow as high an air speed as possible over the birds. Free-standing fans can be introduced to provide additional air movement at bird level. The keeper must have available for each house the following documented information:

- (i) information on the technical details of the ventilation and, if relevant, the cooling and heating system including their location, the size of the inlets and outlets and fan numbers, size and anticipated performance
- (ii) a ventilation plan, and
- (iii) records of technical inspections of the ventilation and alarm systems.

The ventilation plan should provide details of the operational parameters such as airflow, air speed and temperature that will ensure that:

- (i) the concentration of ammonia (NH_3) does not exceed 20 parts per million measured at the level of the chickens' heads
- (ii) the concentration of carbon dioxide (CO_2) does not exceed 3,000 parts per million at the level of the chickens' heads
- (iii) the inside temperature, when the outside temperature measured in the shade exceeds 30°C , does not exceed this outside temperature by more than 3°C , and
- (iv) the average relative humidity measured inside the house during 48 hours does not exceed 70% when the outside temperature is below 10°C . It is recommended that relative humidity be measured daily and the average should not exceed 70% when the outside temperature is continually below 10°C for any 48 hour period.

Evidence that the plan is meeting these operational requirements may be provided by maintaining a record of direct measurements of NH_3 , CO_2 , relative humidity and temperatures.

Continuous measurement of CO_2 and NH_3 is not required but, as a minimum, measurements of CO_2 and NH_3 should be taken when there is risk of excessive build-up of these agents. Usually for CO_2 this is during brooding and for NH_3 during periods of maximum stocking density, especially during colder weather.

The plan should also include details of the alarm and back-up systems and a procedure for dealing with heat stress. (See page 25.)

The ventilation plan should be revised whenever there are any major changes to the structure of the house or to the ventilation system.

It is recommended that, between crops, a visual inspection be made of the air inlets and fans. Heaters, temperature probes and the control system should also be checked to ensure they are functioning correctly. It is also advisable to carry out periodic safety checks on the electrical and gas installations. A record of these technical inspections of the ventilation and alarm systems must be made.

Lighting

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 14 to 16 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

- 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 or ethological needs of any animals being kept in it, appropriate artificial lighting must be provided.
- 16. Animals kept in buildings must not be kept without an appropriate period of rest from artificial lighting.

Conventionally reared meat chickens

Paragraph 10 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- 10 (1) All houses must have lighting with an intensity of at least 20 lux during the lighting periods, measured at bird eye level and illuminating at least 80% of the usable area.
- (2) A temporary reduction from that lighting level is permitted where necessary following veterinary advice.
- (3) Within 7 days from the time when the chickens are placed in the house and until 3 days before the expected time of slaughter, the lighting must follow a 24-hour rhythm and include periods of darkness lasting at least 6 hours in total, with at least one uninterrupted period of darkness of at least 4 hours, excluding dimming periods.

All meat chickens should be housed at light levels which allow them to see clearly and which stimulate activity. This can be achieved by lighting systems using natural or artificial lighting or a combination of both, maintained and operated to give a minimum light of 20 lux at bird eye height over at least 80% of the usable area. If light levels are reduced at thinning to keep birds calm, the light should be returned to a minimum of 20 lux without delay if any birds remain in the house after thinning. A gradual increase in light intensity at this time, similar to a dawn or dusk period, could reduce the risk of back scratching. Where there is concern that returning the lights to 20 lux will result in compromised bird welfare, a temporary reduction in lighting level is permitted on a case-by-case basis but only as a result of following veterinary advice on each occasion.

Conventionally reared meat chickens must be given a period of darkness lasting at least 6 hours in each 24 hour period, with at least one uninterrupted period of darkness of at least 4 hours, excluding dimming periods. It is good practice for all meat chickens to be reared to this standard and preferably the period of darkness provided should be uninterrupted, lasting at least 6 hours in a 24 hour rhythm. Keepers should be mindful that the lights being switched back on after the dark period is likely to lead to a significant increase in bird activity which may cause problems such as back scratching. Greater attention to management practices will therefore be required to ensure that the birds' welfare is maintained when the light is restored. For example, sufficient feeders and drinkers should be available to allow all birds to eat and drink at the same time following the period of rest. Attention will also need to be paid to litter condition, particularly under nipple drinker lines, which could become wet due to the number of birds drinking at the same time. If this is the case, the addition of more litter should be considered.

A "dawn and dusk" light provision with gradual increases and reductions in lighting may help manage the change in activity levels of the birds. Buildings that expose birds to natural daylight can effectively provide this transition and the natural wavelength light spectrum may have additional beneficial effects on bird behaviour. However, there should be a facility to reduce exposure to natural daylight if bird welfare is compromised by high light levels, for example, scratching or injurious pecking, or for specific management procedures, for example, catching.

In the first 7 days following placing of the birds in the house, chicks should be provided with sufficient lighting to ensure that they can easily find feed and water.

Litter

All meat chickens – including breeding birds and those at hatcheries (except for conventionally reared)

Regulation 5 of the Welfare of Farmed Animals (Wales) Regulations 2007

(as amended) states:

- 5 (1) A person responsible for -
- (a) poultry (other than those kept in the systems referred to in Schedule 2 to 4 and conventionally reared meat chickens) kept in a building must ensure that they are kept on, or have access at all times to, well-maintained litter or a well-drained area for resting.

Conventionally reared meat chickens

Paragraph 7 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

7. All chickens must have permanent access to litter which is dry and friable on the surface.

Meat breeding chickens spend their lives in contact with litter and their health and welfare are linked to its quality. Conditions such as hock burn, foot pad lesions and breast blisters are usually consequences of poor litter quality. Well-designed equipment and high standards of management are important if good litter quality is to be maintained. The ventilation capacity should be sufficient to remove excess moisture. The feed composition should be well balanced to avoid problems with wet or sticky droppings. Specialist advice should be sought and acted on and stocking density should be reduced in subsequent flocks if poor litter quality cannot be rectified. (See page 27.)

The material that is used as litter must be selected to ensure that it is of an appropriate

quality. It must be suitable to provide a dry bedding material and must not contain anything that could be toxic or cause injury to the chickens. For conventionally reared meat chickens, litter must be friable (loose) and dry on the surface, and this is recommended for all systems of production.

Measures should be taken to minimise the risk of mould and mite infestation. Litter should be inspected frequently for signs of deterioration, especially in those areas of the house at risk, such as 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 excessively wet or dusty. A drinker system which minimises water spillage should be used, such as water nipples with drip cups positioned at an appropriate height for all birds. Nipple drinkers without cups may be used if they are well managed and the water pressure is checked frequently to ensure there is no leakage.

Automatic or mechanical equipment

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 18 to 21 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

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 defects in automated or mechanical equipment of the type referred to in paragraph 18 are discovered, these must be rectified immediately or, if this is impossible, appropriate steps must be taken to

safeguard the health and well-being of the animals pending the rectification of those defects including the use of alternative methods of feeding and watering and alternative methods of providing and maintaining a satisfactory environment.

20. Where the health and well-being of the 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 at least once every seven days in order to check that there is no defect, and, if any defect is found at any time, it must be rectified immediately.

Conventionally reared meat chickens

Paragraph 9 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

9. In all houses –
- (a) the sound level must be minimised; and
 - (b) 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.

All equipment and services, including feed hoppers, feed chain and delivery systems,

drinkers, ventilating fans, heating and lighting units, fire extinguishers and alarm systems should be cleaned, inspected and maintained regularly and kept in good working order. Generators or other energy backup systems must also be available and tested and maintained regularly.

Ventilation, heating, lighting, feeding, watering and all other equipment or electrical installation should be designed, sited and installed so as to avoid risk of injuring the birds.

All automated equipment upon which the birds' welfare is dependent should incorporate a fail-safe or standby device and an alarm system to warn the keeper of failure. Defects must be rectified immediately or other temporary measures taken to safeguard the health and welfare of the birds until the problem has been rectified. Alternative ways of feeding and of maintaining a satisfactory environment should therefore be ready for use.

Environmental enrichment

The process of environmental enrichment ultimately provides the bird with more choice in its activities, which can be more easily provided in some systems than others.

Environmental enrichment can improve bird health and welfare by reducing disturbances, aggression, injurious pecking, fear responses and stress and improving leg health by increasing the level of physical exercise.

Providing birds with straw bales, perches, low barriers and pecking objects (such as brassicas, scattered whole grain and bales of shavings), can significantly increase the amount of time the birds spend standing, walking and running; reduce the amount of time birds spend sitting and resting; and reduce injurious pecking and the number of aggressive interactions between birds.

Stocking density and freedom of movement

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 9 and 10 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

9. The freedom of movement of animals, having regard to their species and in accordance with good practice 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 good practice and scientific knowledge.

Conventionally reared meat chickens

Paragraphs 3 to 5 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

- 3 (1) Unless sub-paragraph (2) applies, the stocking density must not exceed 33 kilograms per m² of usable area.
- 4 (1) A keeper must ensure that the Welsh Ministers are notified of the intended stocking density of each house where it is intended to keep chickens at a density in excess of 33 kilograms per m² of usable area, and of any subsequent change to that notified density.

- (2) Notification must be made in such manner and form as the Welsh Ministers may require.
 - (3) Notification (including notification of any change) must be given at least 15 working days before stocking at that density or changed density takes place.
 - (4) In this paragraph “working day” means a day other than a Saturday or a Sunday, Christmas Day, Good Friday or a day which is a bank holiday in England and Wales under the Banking and Financial Dealings Act 1971.
5. The requirements of this paragraph are that the keeper must –
- (a) maintain and, on request, make available to the Welsh Ministers, documentation in the house giving a detailed description of the production systems, in particular information on technical details of the house and its equipment, including –
 - (i) a plan of the house including the dimensions of the surfaces occupied by the chickens;
 - (ii) ventilation and any relevant cooling and heating system (including their location), and a ventilation plan, detailing target air quality parameters (such as airflow, air speed and temperature);
 - (iii) feeding and watering systems (and their location);

- (iv) alarm and backup systems in the event of a failure of any equipment essential for the health and well-being of the chickens;
 - (v) floor type and litter normally used; and
 - (vi) records of technical inspections of the ventilation and alarm systems;
- (b) keep up to date the documentation referred to in subparagraph (a);
- (c) ensure that each house is equipped with ventilation and, if necessary, heating and cooling systems designed, constructed and operated in such a way that –
- (i) the concentration of ammonia does not exceed 20 parts per million and the concentration of carbon dioxide does not exceed 3,000 parts per million, when measured at the level of the chickens' heads;
 - (ii) when the outside temperature measured in the shade exceeds 30°C, the inside temperature does not exceed the outside temperature by more than 3° C; and
 - (iii) when the outside temperature is below 10°C, the average relative humidity measured inside the house during a continuous period of 48 hours does not exceed 70%.

Various factors need to be taken into account to promote good welfare when setting and monitoring stocking densities. The observance of any particular maximum stocking density is important but cannot, by itself, ensure the welfare of the birds. There is a close relationship between stockmanship, litter management, environmental control and stocking density. Birds will be maintained in good condition only if the balance is right and the onus is on the owner/keeper to demonstrate that welfare is not compromised whatever the stocking density.

The decision to stock at a particular density should be made on a house basis and should take account of house-specific management factors. There are several management factors that should influence the keeper's decision to stock at a particular density. These include the health and welfare measures of previous flocks, such as reports from the slaughterhouse, and the limitations of the environmental controls within a house, which may vary by season and weather conditions. In order to stock conventionally reared meat chickens above 33kg/m² there must be compliance with the additional factors set out in legislation.

Irrespective of the type of system, all meat chickens should have sufficient freedom of movement to be able, without difficulty, to stand normally, turn around and stretch their wings. They should also have sufficient space to be able to sit without interference from other birds.

Appropriate advice should be taken if problems occur, in particular in conditions of excessive heat or humidity due to inadequate ventilation and poor litter quality. If disease or environmental problems arise in a particular building or system, reducing the stocking density in subsequent flocks may lessen the likelihood of recurrence. Consideration should be given in advance of predicted hot weather to stocking at a reduced density.

Thinning is stressful for the birds and should be avoided. If thinning is undertaken, it should be carried out with care to maintain biosecurity and to ensure minimal disturbance to birds whose feed and water have been temporarily withdrawn. A written protocol should specify procedures to minimise the effect on the birds and the biosecurity risk, including the risk of introducing zoonotic diseases into the flock, and procedures to minimise feed and water withdrawal.

For conventionally reared meat chickens, notification to the Welsh Ministers of intended stocking density of each house was made in 2010 via a form sent by APHA to all known keepers. If keepers change the stocking density of birds reared in a house from that notified in 2010 or build new houses, APHA must be notified 15 working days before the birds are placed. This notification should be made by sending the form referenced at Annex 2.

Mutilations

All meat chickens – including breeding birds and those at hatcheries

Section 5 of the Animal Welfare Act 2006 states:

- 5 (1) A person commits an offence if–
- (a) he carries out a prohibited procedure on a protected animal;
 - (b) he causes such a procedure to be carried out on such an animal.
- (2) A person commits an offence if–
- (a) he is responsible for an animal,
 - (b) another person carries out a prohibited procedure on the animal, and
 - (c) he permitted that to happen or failed to take such steps (whether by way of supervising the other person or otherwise) as were reasonable in all the circumstances to prevent that happening.
- (3) References in this section 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, otherwise than for the purpose of its medical treatment
- (4) Subsections (1) and (2) do not apply in such circumstances as the appropriate national authority may specify by regulations.

The Mutilations (Permitted Procedures) (Wales) Regulations 2007 allow veterinary surgeons or other persons permitted to carry out the procedures under the Veterinary

Surgeons Act 1966 or the Veterinary Surgeons (Exemptions) Order 2015, to carry out a number of permitted procedures on specified animals, including poultry.

Conventionally reared meat chickens

Schedule 4 (A1) of the Mutilations (Permitted Procedures) (Wales) Regulations 2007 states:

A1. None of the procedures listed in the section on birds in Schedule 1, apart from beak trimming (see paragraph 5), may be performed on –

- (1) conventionally reared meat chickens.

All mutilations of chickens are banned under the Animal Welfare Act 2006.

The Mutilations (Permitted Procedures) (Wales) Regulations 2007 exempts certain procedures (see Annex 5) from this ban, provided that they are carried out by a person permitted to carry out the procedure and:

- 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.

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

Beak trimming

All meat chickens – including breeding birds and those at hatcheries

Paragraph 5 (1) to (3) of Schedule 4 to the Mutilations (Permitted Procedures) (Wales) Regulations 2007 states:

- 5 (1) For all poultry, the beak trimming procedure must be performed using a suitable instrument.
- (2) For all poultry, any subsequent haemorrhage from the beak must be arrested by cauterisation.
- (3) For all poultry the procedure must be performed on –
 - (a) both the upper and lower beaks, with not more than one third of each removed, or
 - (b) the upper beak only, with not more than one third removed

Consideration should be given to environmental enrichment as a means of avoiding the necessity to beak trim. Possible methods of environmental enrichment should be risk assessed against introduction of pathogens and include the provision of straw bales or brassicas or scattering of whole grain. (See page 25.) Nutritional deficiencies in feed should be investigated as a possible cause of any incident of injurious pecking.

Beak trimming of meat chickens is not recommended and should not be necessary because they are normally slaughtered before reaching sexual maturity. However, if necessary, this should be done using infra-red technology before 10 days of age, preferably at day old. Beak trimming of older birds should only be carried out in an emergency when advised by a veterinary surgeon. (See page 36 for guidance on beak trimming of breeding birds.)

Conventionally reared meat chickens

Paragraph 5 (6) of Schedule 4 to the Mutilations (Permitted Procedures) (Wales) Regulations 2007 states:

- 5 (6) For conventionally reared meat chickens the procedure –
 - (a) may only be performed in order to prevent feather pecking and cannibalism;
 - (b) may not be performed on birds which are aged 10 days or over;
 - (c) must be carried out by a person who has been provided with suitable and sufficient information, instruction and training so that they are qualified to perform the procedure; and
 - (d) must only be carried out following a consultation and on the advice of a veterinarian.

Record Keeping

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 7 and 8 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

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 carried out in accordance with...
 - (iv) in any other case, paragraph 2(1) or (2) of this schedule.
8. The record referred to in paragraph 7 must be retained for a period of at least three years from the date on which the medicinal treatment was given, or the date of the inspection, and must be made available to an inspector on request.

- (e) the number of chickens remaining in the flock following the removal of chickens for sale or slaughter.
- (2) The record must be retained for at least 3 years.

Additional records are required for conventionally reared meat chickens and these can be found in the “Ventilation, temperature and heat stress” and “Monitoring and follow-up at the slaughterhouse” sections of this Code.

As well as these record keeping requirements, a number of other legislative provisions exist for record keeping on farm. These are set out in Annex 1.

Conventionally reared meat chickens

Paragraph 13 of Part 2, Schedule 5A to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

- 13(1) A keeper must maintain, for each house, a record of –
- (a) the number of chickens introduced;
 - (b) the usable area;
 - (c) the hybrid or breed of the chickens (if known);
 - (d) the number of chickens found dead, with an indication of the causes (if known), as well as the number of chickens culled with cause, on each inspection; and

Contingency planning

Measures should also be put in place for contingency planning following an assessment of possible hazards. Such plans should deal with events such as:

- the disruption of feed, power or water supply, including failure of automated systems
- heat stress
- natural disasters such as flooding
- fires
- arrangements for allowing rapid entry to locked buildings in case of emergency, for example by providing clear instruction on emergency contact details
- arrangements for dealing with 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
- arrangements for both killing and disposal of flocks when depopulation is required in the event of notifiable disease or due to contamination of feed or pasture with toxins.

Section 2: Additional recommendations for free range systems

All meat chickens – including breeding birds and those at hatcheries

Paragraph 17 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) states:

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 must, at all times, have access to a well-drained lying area.

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.

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 or to provide a new ranging area by moving the housing (in the case of portable units) or by rotating the ranging area outside fixed buildings.

Sufficient housing should be available to the birds at all times. It may be necessary to exclude birds from the range, for example in bad weather or in the event of a compulsory housing order (Avian Influenza Protection Zone) being issued during a notifiable disease outbreak, if there is a danger that their health and welfare will be compromised.

Birds should be encouraged to use the outdoor area. Provision of adequate, suitable and properly managed vegetation, overhead cover forming corridors leading out from the house and distributed around the range and a supply of fresh water away from the house, will help induce the birds to range. Feed should not be routinely provided outdoors but, where this is unavoidable, measures should be taken to avoid attracting wild birds, rodents and other animals into the flock. If ponds are located on or near to the range area, they should be fenced off and/or netted to discourage wild birds, in particular water fowl, from landing.

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

Section 3: Additional recommendations for meat breeding and grandparent chickens

Breeding birds for meat chickens have been selected for a balance of many traits, including those relating to the production of fertilised eggs and those relating to the production of chicken meat. Consequently, their husbandry requirements are quite different from those of their progeny. Highly competent stockmanship, a high standard of housing and equipment and good control of the environment are essential.

Breeding procedures

All meat chickens – including breeding birds and those at hatcheries

Paragraphs 28 and 29 of Schedule 1 to the Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) state:

- 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 that are likely to cause minimal or momentary suffering or injury or that might necessitate interventions which would not cause lasting injury.
29. Animals may only be kept for farming purposes if it can reasonably be expected, on the basis of their genotype or phenotype, that they can be kept without any detrimental effect on their health or welfare.

Birds should come from balanced breeding programmes, promoting and protecting health, welfare and production 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.

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 (metal, wood, rubber mat).

Surplus chicks and embryos in hatchery waste or resulting from on-farm hatching should be killed humanely by a trained and competent person and in accordance with the specific welfare at the time of killing legislation.

Feed and water

The rearing and management of meat breeding chickens is a careful balance of appropriate feeding and light management in the puberty phase and appropriate management in lay, so that birds achieve an optimal growth and maintain persistency of lay.

In the rearing phase, an appropriate growth curve for the breed should be followed. During rearing, feed intake should be balanced to avoid birds being fed too much which could lead to excessive weight gain, increases in mortality and seriously compromised health, welfare and production.

However, if feed intake is restricted too much, the birds are likely to experience stress and hunger. Balancing the control of feed intake, with growth and feed type, is necessary to ensure the optimal transition of the birds into adulthood.

With breeder hens and active cockerels in the reproductive phase, feed supply should be continuously adjusted to real production so that the birds thrive and produce well, and do not lose weight. It is particularly important that the needs of the individual birds should be catered for and the flock carefully monitored by experienced staff with the appropriate skills.

Birds must be offered food at least daily throughout the production cycle with the exception of the day of transportation as they travel more comfortably with an empty crop. Increased feed should be given to breeding birds on the day before travel and water should be made available up to the time of catching.

Particular attention should be paid to ensure that all birds get an appropriate quantity of the feed made available to avoid undue competition. Feeding equipment should be capable of delivering small quantities rapidly, accurately and evenly to all birds in the house and the amount of trough space allocated should allow adequate access to feed for all birds intended to be fed. Feed should have good physical qualities, for example hard pellets. Scatter feeding reduces displacement behaviours and increases foraging. If feed is scattered, it should be distributed over a sufficient area to allow access for all birds to be fed.

In addition to routine daily checks, the body weight and condition of the birds should be systematically monitored on a weekly basis. Prompt, appropriate adjustments should be made to feed allocation according to what is found.

The nutritional quality of breeding chicken feed must be carefully monitored and controlled, especially with regard to micronutrients and protein. It is advisable to check nutritional content of rations to confirm it contains the right specification especially if any problems arise. The keeper should be particularly vigilant after changes in feed batches.

During the first 6 weeks of life, feed levels should be adequate to ensure good skeletal development. The level of feed intake throughout rearing should be managed to achieve a steady daily growth rate and not be less than that recommended in the breeders' manuals.

Birds whose feed quantity is controlled may show increased drinking and displacement behaviour such as environmental pecking (for example pecking at the empty feeder and the wall or "spot" pecking). (See page 36.) Higher water intakes can impact negatively on litter quality. Increasing the fibre content of the feed increases the time taken for birds to consume their food and can reduce their water intake, thereby improving litter condition. This has no negative impact on subsequent egg production, weight or quality of the breeding birds.

It may be necessary to manage the supply of water in relation to the feeding system and programme to reduce excessive drinking and to maintain litter quality. However, an adequate supply of fresh drinking water must be provided each day. When access to water is time limited it is vital that there is generous provision of drinkers with adequate flow to enable all birds to drink without undue competition.

During lay, cockerels and hens have different nutritional requirements and may be fed differently within the same house. The equipment used to prevent cockerels taking feed intended for hens should be carefully adjusted to ensure that access for hens is maintained and cockerels are not injured. However, some systems and stages in the flock cycle require both males and females to be fed similar amounts of feed together and so it may be desirable to remove cockerel excluders from female feeding systems. Breeding birds must not be induced to moult by stopping feed and water.

Aggression, injurious pecking and enrichment

The provision of enrichment such as unopened bales of shavings, good quality straw, scattering of bio-secure wholegrain or other enrichment to encourage normal scratching and pecking behaviour, may help to prevent or reduce injurious and aggressive pecking in the rearing period which adversely affects the welfare of the birds.

To enrich the environment, insoluble grit should be offered (either spread on the litter or supplied in separate containers, in a measured amount) from about 6 weeks of age. This will also help the gizzard to break down any litter or feathers which may have been consumed and encourage scratching. Foraging behaviour has the added advantage of improving litter quality. Suitable perches in the rearing house may provide a form of enrichment to aid the birds in performing another of their natural behaviours. Perches will also aid the birds' adaptation from litter to raised, perforated floors when they move to the laying phase.

Beak trimming

All meat chickens – including breeding birds and those at hatcheries

Paragraph 5 (1) to (3) of Schedule 4 to the Mutilations (Permitted Procedures) (Wales) Regulations 2007 states:

- 5 (1) For all poultry, the beak trimming procedure must be performed using a suitable instrument.
- (2) For all poultry, any subsequent haemorrhage from the beak must be arrested by cauterisation.

- (3) For all poultry the procedure must be performed on –
 - (a) both the upper and lower beaks, with not more than one third of each removed, or
 - (b) the upper beak only, with not more than one third removed.

It is not usually necessary to beak trim female breeding and grandparent chicks routinely. For male breeding and grandparent chicks, beak trimming may be necessary to prevent injury to other birds from aggressive or injurious pecking. If so, only the tip of the beak should be removed from these chicks. This should be done using infra-red technology before 10 days of age, preferably at day old. Beak trimming of older birds should only be carried out in an emergency when advised by a veterinary surgeon.

Buildings and accommodation

As with other meat chickens, meat breeding and grandparent birds should be reared in houses in which temperature, humidity, ventilation rates, light levels and photoperiods are carefully regulated. A well designed house will incorporate ventilation and heating systems, effective light-proofing and a lighting system providing controllable light levels with uniform distribution.

Ventilation rates, air distribution and house conditions must at all times be adequate to provide sufficient fresh air appropriate for the age of the birds, without draughts. Air quality, including dust levels and concentrations of carbon monoxide, should be controlled and kept within limits where the welfare of the birds is not negatively affected.

Breeder chickens on controlled feed are more susceptible to low temperatures but less so to high temperatures. If the temperature is allowed to fall there may be a need to increase feed or provide heaters.

Recommended minimum light intensities and photoperiods for meat breeding and grandparent birds are as follows, but higher light intensity should preferably be provided during rearing:

Age	Light intensity	Uninterrupted day length
Day old	60 lux minimum reducing to 10 lux by 10 days of age	Minimum of 8 hours
Up to point of lay	10 lux minimum	Minimum of 8 hours
In lay	20 lux minimum	Increasing from 8 hours to a maximum of 18 hours

Light intensity should be measured at bird eye level height. If aggression or injurious pecking occurs, the lights should be dimmed for a few days and other measures considered to reduce the behaviour. After the first few days, there should be a set period of at least 6 hours of dark, including at least 4 continuous hours of darkness, in any 24 hour period.

Careful attention should be paid to the hen to cockerel ratio (numbers, maturity, weight) to ensure the development of optimal male-female relationships and avoid aggression from females towards immature males, or to protect hens from the presence of too many mature cockerels in the breeder house. Where relationship problems occur, consideration should be given to providing barriers which can reduce stress in females by allowing them to retreat from cockerels.

Stocking density and freedom of movement

Stocking density for meat breeding birds should not exceed 25 kg/m² calculated by dividing the total weight of all the birds (males and females) in the house by total area available to the birds. In calculating this area, consideration should be given to the space taken up by equipment in the house.

Various factors need to be taken into account to promote good welfare when setting and monitoring stocking densities. The observance of any particular maximum stocking density is important but cannot, by itself, ensure the welfare of the birds. There is a close relationship between stockmanship, litter management, environmental control and stocking density. Birds will be maintained in good condition only if the balance is right and the onus is on the keeper to demonstrate that welfare is not compromised whatever the stocking density.

The decision to stock at a particular density should be made on a house basis and should take account of house-specific management factors.

Irrespective of the type of system, all meat breeding chickens should have sufficient freedom of movement to be able, without difficulty, to stand normally, turn around, stretch their wings and perform breeding behaviours.

Litter

As for all meat chickens, litter must be maintained in good condition to avoid possible leg problems, footpad lesions, respiratory and environmental problems. Particular attention must be paid to maintaining ventilation levels and to air movement patterns to avoid draughts at litter level, as well as the addition of litter as required.

In winter, supplementary heating should be available if needed to maintain the correct temperature in breeder houses and prevent deterioration in air and litter quality resulting in respiratory, leg and foot pad problems.

Catching, handling and transport

When birds are transferred to laying facilities, care should be taken when lifting them out of a crate or when tipping them out of an open-topped container. Birds should have immediate access to water on arrival, especially where slats are fitted.

Annex 1: Other legislation affecting meat chickens, meat breeding birds and hatcheries

The main requirements are summarised below. This does not represent an exhaustive list and note that some legislation is regularly updated and/or amended. All UK legislation can be found at: www.legislation.gov.uk

Transport

For information on transporting meat chickens see:

- Council Regulation (EC) No 1/2005 (the protection of animals during transport and related operations)
- the Welfare of Animals (Transport) (Wales) Order 2007, and
- associated guidance.

Slaughter

For information on welfare at slaughter and killing meat chickens see:

- Council Regulation (EC) No 1099/2009 (the protection of animals at the time of killing), and associated domestic legislation and guidance

Free range and organic systems

For poultry meat marketing criteria (e.g. requirements for use of special marketing terms such as 'free range') including stocking density, feed requirements, range access, and minimum age at slaughter see:

- Commission Regulation (EC) No 543/2008

The requirements are enforced in Wales by the Poultrymeat (Wales) Regulations 2011. Separate enforcement provisions exist for England, Scotland and Northern Ireland.

For organic production requirements see:

- Council Regulation (EC) No 834/2007
- Commission Regulation (EC) No 889/2008

The requirements are enforced in the UK by the Organic Products Regulations 2009.

Food hygiene

For specific hygiene rules on the hygiene of foodstuffs see:

- Regulation (EC) 853/2004 of the European Parliament and of the Council

Section III of Annex II of this Regulation requires food business operators operating slaughterhouses, as appropriate, to request, receive, check and act upon food chain information as set out in this Section in respect of all animals, other than wild game, sent or intended to be sent to the slaughterhouse.

Record keeping

See the following:

The Avian Influenza (Preventive Measures) (Wales) Regulations 2006 requires those keeping 50 birds or more to register their flock with APHA.

The Control of Salmonella in Poultry (Wales) Order 2008 requires certain records to be kept (including at hatcheries) and Salmonella testing to be carried out for breeding and laying flocks.

The Control of Salmonella in Broiler Flocks

(Wales) Order 2009 requires certain records to be kept and Salmonella testing to be carried out for meat chicken flocks.

Newcastle disease is covered by the Diseases of Poultry (Wales) Order 2003 which requires those keeping flocks of at least 250 birds to keep certain records.

The Veterinary Medicines Regulations

2013 require records to be kept on medicine usage, administration and disposal of unused medicines. Records must be kept for at least 5 years.

Note: The Welfare of Farmed Animals (Wales) Regulations 2007 (as amended) relates to recording 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 includes the requirement for records of when and where medicines are acquired in addition to the requirement for records at the time of administration.

Animal by-products

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

- Council Regulation (EC) No 1069/2009
- Commission Regulation (EU) No 142/2011

The requirements are enforced by The Animal By- Products (Enforcement) (Wales) Regulation 2014.

Annex 2: Form to be used to notify APHA of a change in stocking density of conventionally reared meat chickens

The WF90 meat chicken notification form (England and Scotland) is available on the GOV.UK website at the following link: www.gov.uk/government/publications/meat-chicken-notification

Annex 3: Trigger levels

Process 1

A trigger report is generated if the level of a post-mortem condition is exceptionally high (defined as greater than 6 standard deviations above the average).

Post-mortem condition	Process 1 trigger level %
Ascites/Oedema	2.02
Cellulitis & Dermatitis	3.00
Dead on Arrival (DOA)	1.51
Emaciation	0.67
Joint lesions	0.43
Septicaemia/Respiratory	9.28
Total rejections	11.76
Cumulative Daily Mortality Rate	11.85
FPD score*	167

*The FPD score is not a percentage but is a score of the severity and extent of lesions (between 0 and 200) based on scoring 100 feet.

Process 2

A trigger report is generated if the Cumulative Daily Mortality Rate is unusually high (defined as greater than 3 standard deviations above the average = 7.37%) and, additionally, the level of three or more other post-mortem conditions is high (defined as above the average).

Post-mortem condition	Process 2 trigger level (%)
Ascites/Oedema	0.21
Cellulitis & Dermatitis	0.20
Dead on Arrival (DOA)	0.12
Emaciation	0.04
Joint lesions	0.02
Septicaemia/Respiratory	0.49
Total rejections	1.11
FPD score*	60

*The FPD score is not a percentage but is a score of the severity and extent of lesions (between 0 and 200) based on scoring 100 feet.

Annex 4: Cumulative Daily Mortality Rate (CDMR): worked example

The total mortality in this example – a shed with 20,200 birds placed, one thinning and 549 birds dead in total – is $549/20,200 \times 100 = 2.72\%$. The CDMR is 2.85%. In this example there is not much difference between the two figures, but this could have been greater if, for example, there had been high mortality in the house.

Age of birds/day	Numbers of birds in the house at the start of the day	Numbers of birds culled AND numbers of birds found dead each day	Daily mortality rate	Cumulative daily mortality rate	
1	20200	29	0.1436	0.1436	
2	20171	20	0.0992	0.2427	
3	20151	15	0.0744	0.3172	
4	20136	15	0.0745	0.3916	
5	20121	19	0.0944	0.4861	
6	20102	10	0.0497	0.5358	
7	20092	15	0.0747	0.6105	
8	20077	20	0.0996	0.7101	
9	20057	10	0.0499	0.7600	
10	20047	12	0.0599	0.8198	
11	20035	10	0.0499	0.8697	
12	20025	8	0.0400	0.9097	
13	20017	10	0.0500	0.9596	
14	20007	9	0.0450	1.0046	
15	19998	20	0.1000	1.1046	
16	19978	15	0.0751	1.1797	
17	19963	9	0.0451	1.2248	
18	19954	8	0.0401	1.2649	
19	19946	10	0.0501	1.3150	
20	19936	19	0.0953	1.4103	
21	19917	10	0.0502	1.4605	
22	19907	8	0.0402	1.5007	
23	19899	10	0.0503	1.5510	
24	19889	9	0.0453	1.5962	
25	19880	21	0.1056	1.7019	
26	19859	14	0.0705	1.7724	
27	19845	27	0.1361	1.9084	
28	19818	12	0.0606	1.9690	
29	19806	6	0.0303	1.9993	
30	19800	22	0.1111	2.1104	
31	19778	31	0.1567	2.2671	

Age of birds/day	Numbers of birds in the house at the start of the day	Numbers of birds culled AND numbers of birds found dead each day	Daily mortality rate	Cumulative daily mortality rate	
32	16548	19	0.1148	2.3819	Thinned
33	16529	21	0.1270	2.5090	
34	16508	12	0.0727	2.5817	
35	16496	10	0.0606	2.6423	
36	16486	8	0.0485	2.6908	
37	16478	26	0.1578	2.8486	cleared

Annex 5: Permitted procedures

All mutilations of chickens are banned under the Animal Welfare Act 2006. The Mutilations (Permitted Procedures) (Wales) Regulations 2007 exempts certain procedures from this ban. The permitted procedures for conventionally reared meat chickens and for all other meat chickens and meat breeding chickens are listed below. Whilst some mutilations are not currently prohibited, good practice should ensure that they have a very limited role if any in modern day poultry production systems. The lists are correct at the point of publication

Conventionally reared meat chickens

If certain provisions are adhered to, beak trimming can be performed on conventionally reared meat chickens. The law states that if beak trimming is carried out, it:

- may only be performed in order to prevent feather pecking and cannibalism
- may not be performed on birds which are aged 10 days or over
- must be carried out by a person who has been provided with suitable and sufficient information, instruction and training so that they are qualified to perform the procedure
- must only be carried out following a consultation and on the advice of a veterinarian
- must be performed using a suitable instrument
- must be performed on both the lower and upper beaks, with not more than one third of each removed, or the upper beak only, with not more than one third removed, and
- any subsequent haemorrhage from the beak must be arrested by cauterisation.

All other meat chickens and meat breeding chickens

Other methods of identification involving a mutilation required by law can be carried out.

Beak trimming – the law states that if this procedure is carried out, it:

- must be performed using a suitable instrument
- must be performed on both the lower and upper beaks, with not more than one third of each removed, or the upper beak only, with not more than one third removed, and
- any subsequent haemorrhage from the beak must be arrested by cauterisation.

De-toeing – the law states:

- this procedure can only be carried out on a bird that is less than 3 days of age unless a veterinary surgeon considers that it is necessary
- an anaesthetic must be administered where the bird is aged 3 days or over.

Dubbing – the law states:

- this procedure can only be carried out on a bird that is less than 3 days of age unless a veterinary surgeon considers that it is necessary
- an anaesthetic must be administered where the bird is aged 3 days or over.

Laparoscopy (examination of the abdominal cavity by insertion of an instrument called a laparoscope) – the law states:

- this procedure can only be carried out if an anaesthetic is administered
- Micro-chipping for identification can be carried out.

Wing tagging for identification – the law states this procedure:

- may only be carried out on farmed birds for the purposes of breed improvement programmes or testing for the presence of disease.

Sources of further information*

Code of recommendations of the Council of Europe

This Code 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 meat chickens.

See: <https://rm.coe.int/16805165ec>

Slaughter

The Humane Slaughter Association has a Code of Practice for the Disposal of Chicks in Hatcheries.

Animal by-products

For further information on animal by-products, see: www.gov.uk/guidance/animal-by-product-categories-site-approval-hygiene-and-disposal

Welfare outcome assessments

Advice on measuring welfare outcomes can be found at: www.assurewel.org

Catching and handling

- Advice on catching and handling can be found in the Humane Slaughter Association's Poultry Catching and Handling Technical Note 15
- [www.hsa.org.uk/shop/publications-1/product/-poultry-catching-and-handling-\(free-pdf\)](http://www.hsa.org.uk/shop/publications-1/product/-poultry-catching-and-handling-(free-pdf))

Antimicrobials and vaccines

Guidance on the responsible use of antimicrobials and vaccines can be found at: www.ruma.org.uk/poultry/
www.farmantibiotics.org/media-news-updates/progress-by-sector/poultry/

Registering poultry

Guidance on registering poultry can be found at: www.gov.uk/guidance/poultry-registration#how-to-register

* These sources of further information are for information only and should not be considered to be part of the Code of Practice. These sources of information are current on the date that this Code is published (please see the final page for the date of publication). You should be aware that any of the sources of information listed here could change.