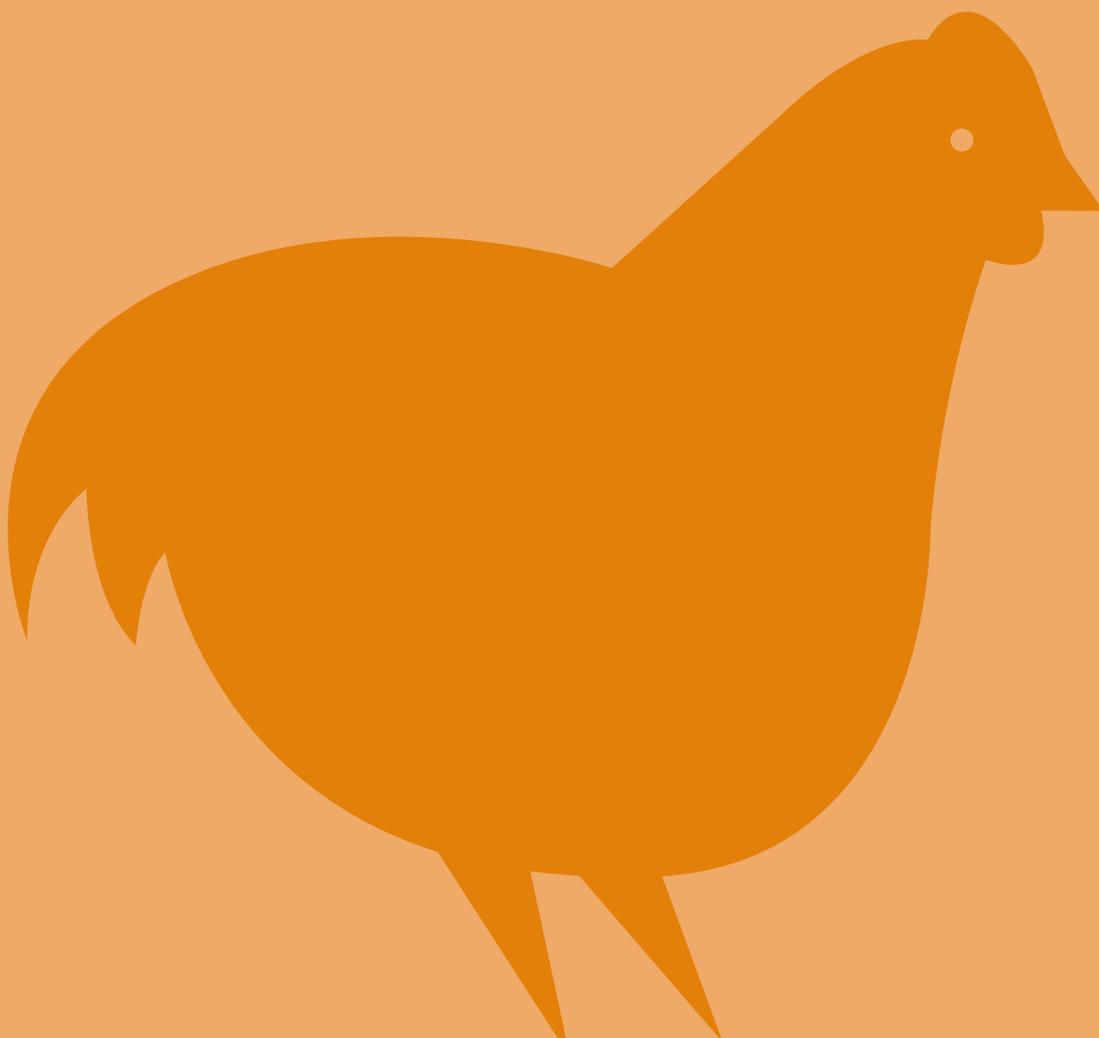


# meat chickens and breeding chickens

code of recommendations for the welfare of livestock



CODE OF RECOMMENDATIONS FOR THE WELFARE OF LIVESTOCK:  
MEAT CHICKENS AND BREEDING CHICKENS

NOTE

<sup>④</sup> After consultation, this Code, (which consists of paragraphs 1 to 102), has been put before both Houses of Parliament for authority to issue it under Section 3 of the Agriculture (Miscellaneous Provisions) Act 1968.

This Section allows “the Ministers” to produce codes of recommendations for the welfare of livestock and to issue such codes once they have been approved in draft by both Houses of Parliament. However, the original definition of “the Ministers” (see section 50 of the 1968 Act) has been changed to reflect devolution for Scotland and Wales and the creation of the Department for Environment, Food and Rural Affairs. In England, the powers of “the Ministers” were first transferred to the Minister of Agriculture, Fisheries and Food by the Transfer of Functions (Agriculture and Food) Order 1999 (S.I. 1999/3141) and then transferred to the Secretary of State by the Ministry of Agriculture, Fisheries and Food (Dissolution) Order 2002 (S.I. 2002/794).

In Scotland, the powers of “the Ministers” had previously been transferred to the Scottish Ministers by Section 53 of the Scotland Act 1998 (1998 c.46) and, in Wales, the powers of “the Ministers” had previously been transferred to the National Assembly for Wales by article 2 (a) of the National Assembly for Wales (Transfer of Functions) Order 1999 (S.I. 1999/672).

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This preface is not part of the Code but is intended to explain its purpose and to indicate the broad considerations upon which it is based. Similarly, the legislation quoted in boxes throughout the document is not part of the Code but is intended to highlight some of the legal requirements. The law, as quoted in these boxes, is that in force on the date of publication or reprinting of the Code (please turn to the back cover for this information). Readers should be aware that any of the legal requirements quoted might be subject to change - they should seek confirmation before assuming that these are an accurate statement of the law currently in force.

Regulation 10 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) provides that:

Any person who employs or engages a person to attend to animals shall ensure that the person attending to the animals

- is acquainted with the provisions of all relevant statutory welfare codes relating to the animals being attended to;
- has access to a copy of those codes while he is attending to the animals; and
- has received instruction and guidance on those codes.

Any person who keeps animals, or who causes or knowingly permits animals to be kept, shall not attend to them unless he has access to all relevant statutory welfare codes relating to the animals while he is attending to them, and is acquainted with the provisions of those codes.

In Regulation 2 it states that “statutory welfare code” means a code for the time being issued under Section 3 of the Agriculture (Miscellaneous Provisions) Act 1968.

To cause unnecessary pain or unnecessary distress to any livestock on agricultural land is an offence under Section 1(1) of the Agriculture (Miscellaneous Provisions) Act 1968. The breach of a code provision, whilst not an offence

in itself, can nevertheless be used in evidence as tending to establish the guilt of anyone accused of causing the offence of causing unnecessary pain or distress under the Act (Section 3(4)).

Regulation 3(1) of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No.1870) states that owners and keepers of animals shall take all reasonable steps:

- to ensure the welfare of the animals under their care; and
- to ensure that the animals are not caused any unnecessary pain, suffering or injury.

Regulation 3(3) of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) states that:

- In deciding whether the conditions under which animals are being bred or kept comply with the requirements set out in Schedule 1 of the Regulations, the owner and keeper of the animals shall have regard to their species, and to their degree of development, adaptation and domestication, and to their physiological and ethological needs in accordance with established experience and scientific knowledge.

Regulation 11 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) states that:

- Where an authorised person considers that animals are being kept in a way which is likely to cause unnecessary pain, suffering or injury, or in any other way in contravention of any provision of these Regulations, he may serve a notice on the person appearing to him to be in charge of the animals requiring that person, within the period stated in the notice, to take any action that the authorised person considers to be reasonably necessary to ensure compliance with these Regulations and the authorised person shall give his reasons for requiring that action to be taken.



Regulation 13 (2) of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) states that:

- In any proceedings against an owner or keeper of animals for a failure to comply with Regulation 3(1) or 3(2), the owner or keeper as the case may be, may rely on his compliance with any relevant recommendation contained in a statutory welfare code as tending to establish his compliance with the relevant regulation.

The Code is intended to encourage all those who care for farm animals to adopt the highest standards of husbandry. Without good stockmanship, animal welfare can never be adequately protected. Adherence to these recommendations will help flock-keepers to reach the required standard.

The welfare of meat chickens and breeding chickens is considered within a framework, elaborated by the Farm Animal Welfare Council, and known as the 'Five Freedoms'. These form a logical basis for the assessment of welfare within any system together with the actions necessary to safeguard welfare within the constraints of an efficient livestock industry.

#### **The Five Freedoms are:**

##### **1. FREEDOM FROM HUNGER AND THIRST**

- by ready access to fresh water and a diet to maintain full health and vigour;

##### **2. FREEDOM FROM DISCOMFORT**

- by providing an appropriate environment including shelter and a comfortable resting area;

##### **3. FREEDOM FROM PAIN, INJURY OR DISEASE**

- by prevention or rapid diagnosis and treatment;

##### **4. FREEDOM TO EXPRESS NORMAL BEHAVIOUR**

- by providing sufficient space, proper facilities and company of the animals' own kind;

##### **5. FREEDOM FROM FEAR AND DISTRESS**

- by ensuring conditions and treatment to avoid mental suffering.

In acknowledging these freedoms, those who have care of livestock should practise:-

- caring and responsible planning and management;
- skilled, knowledgeable and conscientious stockmanship;
- appropriate environmental design (for example, of the husbandry system);
- considerate handling and transport;
- humane slaughter.

The Protection of Animals Acts (the Protection of Animals Acts 1911-1988 and the Protection of Animals (Amendment) Act 2000) contain the general law relating to cruelty to animals. Broadly it is an offence (under Section 1 of the 1911 Act) to be cruel to any domestic or captive animal by anything that is done or omitted to be done.

Section 12(2) of the 1911 Act empowers a police constable to place in safe custody, animals in the charge of persons apprehended for an offence under the Act until the end of proceedings or the court orders the return of the animals. The reasonable costs involved, including any necessary veterinary treatment, are recoverable by the police from the owner upon conviction.

Under section 1 of the Protection of Animals (Amendment) Act 1954, as amended by the 1988 Act, the court has the power to disqualify a person convicted under these Acts from having custody of any animal. The ban can specify a particular kind of animal or all animals for such period as the court thinks fit.

The Protection of Animals (Amendment) Act 2000 supplements the 1911 Act by allowing a court to make an order relating to the care, disposal or slaughter of animals kept for commercial purposes that are the subject of a prosecution brought under the 1911 Act by a "prosecutor". A "prosecutor" is defined in the 2000 Act to include certain public bodies that conduct prosecutions (Crown Prosecution Service, government departments and local authorities) and any person or bodies approved by DEFRA or National Assembly for Wales. The 2000 Act then allows reasonable costs to be recovered from the owner by the "prosecutor".

This Code applies in England only and has been issued by the Secretary of State for Department of Environment, Food and Rural Affairs (following approval in draft by both Houses of Parliament). It replaces (also as regards England only) that part of the existing Domestic Fowls Code (issued in 1987), relating to the welfare of meat chickens and breeding chickens.

Similar Codes are being produced in Scotland, Wales and Northern Ireland. Until these new Codes are issued, the existing Domestic Fowls Code will continue to apply in Scotland and Wales. Separate arrangements exist in Northern Ireland.

**THIS WELFARE CODE WAS ISSUED ON  
22nd July 2002**



- 1 This Code (which applies in England only) applies to all parts of the meat chicken production sector, including breeding birds and grandparent stock. For the purposes of the code, “flock-keeper” means the owner of the birds or the person responsible for looking after them. The recommendations are relevant to meat chickens and breeding chickens under all types of husbandry system. Following them will help to ensure that the welfare of the birds is safeguarded.
- 2 No person should operate or set up a meat chicken or breeding chicken unit unless the welfare of all the birds can be safeguarded. This can be achieved by ensuring that the buildings and equipment, and the skills and ability of the flock-keeper, are appropriate to the husbandry system and the number of birds to be kept.
- 3 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 contract can be of value in ensuring that all parties are clear about their responsibilities in respect of welfare. However, the obligations imposed by the law will still apply.
- 4 The strain 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 (e.g. organic, free range) to use suitable strains and feeding regimes.

Schedule 1, paragraph 1 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No.1870) states that:

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

- 5 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.
  - 6 All flock-keepers should demonstrate full understanding of the welfare needs and basic biology of the birds and have shown that they are capable of safeguarding them under all foreseeable conditions before being given responsibility for a flock. A good flock-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.
  - 7 Staff, including those employed by contractors, should be given appropriate training. This requires the acquisition of specific stockmanship skills which may be developed on-farm, working with an experienced person, or by following a course offered by a suitable training provider. Flock-keepers should demonstrate competence and understanding before they are given responsibility for the birds. Training should continue throughout the duration of employment, and suitable refresher courses should be undertaken regularly. Wherever possible, the training should be of a type which leads to formal recognition of competence.
  - 8 A training plan should be implemented to ensure that those working with meat or breeding chickens recognise not only normal behaviour and good health but also signs of illness or disease or impending health problems. If specialised tasks are to be performed, for example vaccination or humane culling, then specific training should be given.
- Alternatively, the services of a competent contractor using trained staff should be obtained.
- 9 Staff should establish a methodical routine in completing the range of tasks involved in keeping chickens. As part of this they should be particularly vigilant in checking that systems are operating properly and birds are behaving normally. This will enable flock-keepers to detect problems in their earliest stages and acquire a good understanding of the action to be taken if a problem is noticed. If the cause is not obvious, or if the flock-keeper's action is not effective, immediate veterinary or technical advice should be obtained.
  - 10 It is essential to ensure that enough time is available within the flock-keeper's daily work routine for the birds to be properly inspected and for any remedial action to be taken. Large flocks can be managed successfully but in general the larger the size of unit, the greater the degree of skill and dedication needed to safeguard the welfare of the birds.



## feed and water

Schedule 1, paragraphs 22-27 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870), state that:

- Animals shall 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.

- No animals shall be provided with food or liquid in a manner, nor shall such food or liquid contain any substance, which may cause them unnecessary suffering or injury.

- All animals shall 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.

- All animals shall 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.

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

- No other substance, with the exception of those given for therapeutic or prophylactic purposes or for the purpose of zootechnical treatment shall be administered to animals unless it has been demonstrated by scientific studies of animal welfare or established experience that the effect of that substance is not detrimental to the health or welfare of the animals.

11 All birds should have daily access to feed. When introducing birds to a new environment, the flock-keeper should ensure that the birds can find feed and water.

12 To prevent birds having access to stale or contaminated feed or water these should be replaced on a regular basis. Provision must be made for supplying water in freezing conditions.

13 In intensively housed systems, the maximum distance which any bird should have to travel in a house to reach feed and water should not be more than 4 metres. However, in some situations, such as some outdoor production systems, it may be necessary for the birds to travel more than 4 metres; in these situations, all birds must be adequately cared for in terms of stocking density, feeding and drinking space to allow for such movements.

14 Sudden changes in the type, quantity and make-up of feed should be avoided. Any changes in diet should be introduced gradually.

15 Compounded feeds which have been prepared for other species should be avoided as certain substances can be toxic to birds.

16 For meat chickens, feed should not be withheld for more than 12 hours before the birds are slaughtered or delivered to a new farm. This period of 12 hours must be an inclusive period to include the catching, loading, transport lairaging and unloading time prior to slaughter. Prior to transport, water should be provided up to the start of the loading procedure (see paragraph 88 for specific provisions for breeding chickens.)

17 Water meters should be fitted to each house to enable daily monitoring of water usage. Daily records of water consumption provide an early warning of potential problems and a water meter is a necessary management tool.

18 Daily access to water throughout the period of lighting and a sufficient number of drinkers, well distributed and correctly adjusted, should be provided.

## inspection

Schedule 1, paragraph 2 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) requires that:

- All animals kept in husbandry systems in which their welfare depends on frequent human attention shall be thoroughly inspected at least once a day to check that they are in a state of well-being.

- Animals kept in systems other than husbandry systems in which their welfare depends on frequent human attention shall be inspected at intervals sufficient to avoid any suffering.

Schedule 1, paragraph 3 states that:

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

- 19 In order to reduce the risk of welfare problems developing on meat chicken or breeding chicken units, it is recommended that a systematic inspection of all flocks should be undertaken at least twice each day at appropriate intervals. Young birds, in the first few days of life, should be inspected more frequently.
- 20 These 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.
- 21 Flock-keepers should establish in advance the best course of action to take should problems be identified and ensure that veterinary or other expert advice is available when needed.
- 22 Light levels during inspection should be sufficiently high to ensure that all birds in all parts of the house are clearly visible.

23 While it may not be 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.

24 In order to ensure a thorough inspection the flock-keeper should walk within 3 metres of every bird and 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 should enable the identification of any individual that is sick, injured or weak. Any such birds should immediately be removed to a hospital pen and treated or humanely killed. Birds with considerable difficulty in walking, severe ascites, malformations, severe wounds or seizures should be culled immediately unless they can be treated and are likely to recover without unnecessary suffering. Dead birds should be removed without delay.

It is a general offence under the Welfare of Animals (Slaughter or Killing) Regulations 1995 (S.I. 1995 No. 731) as amended by the Welfare of Animals (Slaughter or Killing) (Amendment) Regulations 1999 (S.I. 1999 No. 400) and the Welfare of Animals (Slaughter or Killing) (England) (Amendment) Regulations 2000 (S.I. 2000 No. 3352) to cause or permit any avoidable excitement, pain or suffering to any animal (bird) during the slaughter or killing process (Regulation 4(1)). The general offence applies in all cases, but the detailed provisions in respect of the method of slaughter or killing do not apply when an animal (bird) has to be killed immediately for emergency reasons (Regulation 13(2)).

When an animal (bird) is routinely slaughtered or killed on farm, this must be done using a permitted method. The permitted methods of killing poultry include decapitation and neck dislocation.



## disease control

Schedule 1, paragraph 5 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870), state that any animals which appear to be ill or injured:

- shall be cared for appropriately without delay; and
- where they do not respond to such care, veterinary advice shall be obtained as soon as possible.

Schedule 1, paragraph 6 states:

- Where necessary, sick or injured animals shall be isolated in suitable accommodation with, where appropriate, dry comfortable bedding.

- 25 A health and welfare programme should be implemented for each unit which sets out health and husbandry activities covering the whole of the production cycle. It should also establish management procedures and control measures to reduce the risk of infections and injury. This will normally include an effective vaccination protocol (which should be carefully monitored to ensure efficacy) to reduce the risk of disease outbreaks. The health and welfare programme should be developed with appropriate veterinary advice, reviewed against performance and updated accordingly.
- 26 Important indications of good health are clear, bright eyes, alertness, good posture, vigorous movements if unduly disturbed, active feeding and drinking, singing and vocalisation, satisfactory egg production in the case of breeding chickens, and clean and healthy skin, shanks and feet. Any departure from the norm may indicate a problem which should be given immediate attention.
- 27 A disease challenge may first be noticed by a change in water consumption, a reluctance to eat, changes in litter quality or in the general behaviour of the flock. It is good management

practice to keep daily records of water consumption and where possible, feed intake. 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.

- 28 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.
- 29 Should the flock-keeper decide that there is a good chance of a sick bird recovering, it should be isolated in a hospital pen, providing it is able to eat, drink and stand unassisted. Birds should be examined frequently throughout the day. However, if a bird is suffering and cannot be treated or if it fails to show significant improvement within 24 hours of being placed in the hospital pen it should be humanely killed without delay.
- 30 All those in contact with birds should practice strict hygiene and disinfection procedures. Where possible the site should be managed so that all houses are empty simultaneously 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.
- 31 When houses are emptied and cleaned, old litter should be removed from the site before re-stocking so as to reduce the risk of the carry over of disease.

## leg health

- 32 Flock-keepers should monitor all birds for signs of lameness, leg weakness or abnormal gait on a daily basis. Any bird which is unable to move about freely and find feed and water must be humanely killed as soon as it is detected unless it can be treated and is likely to recover without unnecessary suffering.

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- 33 Management measures should be taken to prevent lameness, having regard to previous experience on the farm and recognised best practice. The strain and source of chicks, stocking density, lighting patterns, feed composition and feeding routine and litter management should all be considered. Lameness is often caused by a bone or joint infection so effective prevention and control of viral and bacterial disease is essential. If a lameness problem develops, management and husbandry practices must immediately be altered as appropriate in order to rectify the problem. Encouraging activity will help prevent the occurrence of leg problems.
- 34 Chickens can suffer from lameness due to infections acquired in the parent flock or hatchery. It is believed that 60% of lameness cases result from infectious causes. 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. Husbandry measures should be designed to minimise floor eggs and heavily soiled eggs should not be set as hatching eggs.



## mutilations

### general

#### Prohibited operations

The following are prohibited by law:

- *De-winging, pinioning, notching or tendon severing*, which involve mutilation of wing tissues. When it is necessary to reduce the effects of flightiness, the flight feathers of one wing may be clipped.
- *The use of blinkers which pierce the nasal septum*. Other forms of device fitted to bird's heads (such as spectacles, contact lenses and nasal bits) may also cause welfare problems and should not be used.
- *Surgical castration and devoicing*.

The Welfare of Livestock (Prohibited Operations) Regulations 1982 (SI 1982 No 1884) prohibit the fitting of blinkers to poultry by a method involving mutilation of the nasal septum, operations on birds (other than feather clipping) to impede their flight and the devoicing or surgical castration of male birds.

- 35 Mutilations can cause considerable pain and therefore constitute a major welfare insult to farm animals. They are undesirable in principle and should only be carried out where necessary to avoid a worse welfare problem. Producers should consider carefully the necessity of performing any mutilation. Where deemed necessary, mutilations should be carried out humanely, in accordance with the law and by trained, competent staff. High standards of hygiene are essential.

### beak trimming

When not carried out by a veterinary surgeon beak-trimming must be carried out in accordance with the Veterinary Surgery (Exemptions) Order 1962 (SI 1962 No 2557) i.e.: The operation of beak-trimming (sometimes known as debeaking) means the

removal from a bird by means of a suitable instrument of

(i) not more than a one-third part of its beak, measured from the tip towards the entrance of the nostrils, if carried out as a single operation; or

(ii) not more than a one-third part of its upper beak only, measured in the same way; and the arrest of any subsequent haemorrhage from the beak by cauterisation.

- 36 Beak trimming of birds reared for meat should not be necessary because they are normally slaughtered before reaching sexual maturity. Beak trimming of breeding chickens should be avoided if at all possible, and used only if veterinary advice is that the procedure is essential to prevent worse welfare problems of injurious feather pecking and cannibalism. Consideration should be given to environmental enrichment as a means of avoiding the necessity to beak trim; possible methods of environmental enrichment include the provision of straw bales or brassicas or scattering of whole grain.

- 37 It is unnecessary to beak trim female breeding chicks and only the tip of the beak should be removed from male breeding chicks. This is best done at 5 to 10 days of age in order to allow the chicks to establish eating and pecking behaviours before the operation takes place. Beak trimming of older birds should only be carried out when advised by a veterinary surgeon.

### dubbing

The Veterinary Surgeons Act 1966 (Schedule 3 Amendment Order 1988 (SI 1988 No 526) permits only a veterinary surgeon to remove the combs or to cut the toes of a domestic fowl which has reached the age of 72 hours. On birds younger than 72 hours the operations may be carried out by unqualified persons (those over 18 years of age) using a suitable instrument. The removal of the dependent

portion of a bird's wattles may also be removed by unqualified persons, using a suitable instrument.

- 38 The removal of all, or part, of the male comb is known as dubbing. Removal of the comb offers few, if any, welfare advantages in comparison with the disturbance and pain likely to be caused and should be avoided. Where the operation occurs, it is usually performed when the chicks are one day old using sharp scissors and should only be undertaken by appropriately trained personnel. Once chicks are over 72 hours old, the procedure must only be carried out by a veterinary surgeon: this is a requirement of law.

### despurring

- 39 This is the removal, at day-old, of the spur bud on the back of the male's leg using a heated wire. If the spur grows to be very pronounced it may cause damage to females during mating. Selection of breeding male stock with the genotype of short, blunt spurs should be encouraged, so that routine despurring should not be necessary.

### declawing

- 40 Some parts of the industry remove the dew and pivot claw from the feet of breeding males to prevent damage to females during natural mating. The procedure is usually carried out at day-old and must be carried out by a trained, competent person. It is more common to remove only the dew claws as these cause significantly more damage than the pivot claws. The removal of the pivot claw has little justification in welfare terms and should be avoided.

### toe removal

- 41 This mutilation is controlled by law (see box following paragraph 37). Toe removal (cutting) for purposes of identification is an unnecessary mutilation and should be avoided. Instead alternative methods of identification should be used that do not adversely affect the chicks' welfare.



Schedule 1, paragraphs 11 and 12 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No.1870), state that:

- 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, shall not be harmful to them and shall be capable of being thoroughly cleaned and disinfected.

- Accommodation and fittings for securing animals shall be constructed and maintained so that there are no sharp edges or protrusions likely to cause injury to them.

## ventilation and temperature

Schedule 1, paragraph 13 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No.1870) states that:

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

## general

- 42 Advice on welfare aspects should be sought from qualified advisers before any new buildings are constructed or existing buildings modified. It is important to ensure that the design of housing and equipment is suitable for the intended use. The incorporation of facilities for raising drinkers and feeders to aid access for handling equipment should be considered. Consideration should also be given to the incorporation of weighing, handling and loading facilities.
- 43 Flock-keepers should take measures to protect birds from predators, rodents and other animals. Further advice on the control of vermin can be found in the DEFRA Code of Practice for the Prevention of Rodent Infestations in Poultry Flocks - see Appendix 1.
- 44 Ventilation rates and house conditions should at all times be adequate to provide sufficient fresh air for the birds and keep the litter dry and friable. Air quality, including dust level and concentrations of carbon dioxide, carbon monoxide and ammonia, should be controlled and kept within limits where the welfare of the birds is not negatively affected. In particular, the concentration of ammonia should not exceed 20ppm of air measured at bird height level.
- 45 Extremes of temperature should be avoided. Maximum and minimum temperatures should be monitored and recorded daily to assist management. Birds should be protected from cold draughts. Efforts should be made to ensure that the ventilation systems do not result in large differences in air speed across the house.
- 46 Chicks should be placed in the brooding area when they arrive in the house 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 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.
- 47 Birds on restricted 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.

## heat stress

- 48 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 and distribution, especially at bird level.
- 49 Flock-keepers should plan ahead to avoid heat stress. During the summer months consideration should be given to reducing stocking density at the time of ordering or placing day-old chicks. If suffering or mortality occurs, the onus will be on the person responsible for the birds to demonstrate that the measures taken were appropriate for the design of the building, its locality and the predictable maximum temperature/humidity at the time.
- 50 During hot and humid conditions, the birds should be checked frequently, but not disturbed unduly.
- 51 Steps should be taken to minimise the potential for heat stress by increasing ventilation and air speed at bird level. Portable back-up fans should be available. The air temperature within a building may be reduced by improved insulation, hosing the roof and the correct use of evaporative cooling of incoming air. The heat output of the birds may be reduced by lowering stocking density or changing the feeding patterns. Advice about management measures to prevent heat stress is given in a DEFRA booklet – "Heat Stress in Poultry" - see Appendix 1.

## lighting

Schedule 1, paragraphs 14-16 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I.2000 No.1870), state that:

- Animals kept in buildings shall not be kept in permanent darkness.

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

- Animals kept in buildings shall not be kept without an appropriate period of rest from artificial lighting.

- 52 Chickens should be housed at light levels which allow them to see clearly and which stimulate activity. This should be provided by lighting systems designed, maintained and operated to give a minimum light level of 10 lux at bird eye height. Illumination of the house to at least 20 lux will further encourage activity. Houses should have a uniform level of light. If a behavioural problem such as cannibalism occurs, it may be necessary to dim the lights for a few days.
- 53 Meat chickens which do not have access to daylight should be given at least 8 hours of artificial lighting each day. It is important for bird welfare to provide them with a period of darkness (not less than 30 minutes) in each 24-hour cycle. This ensures the birds become used to total darkness and helps to prevent panic in the event of a power failure. Longer periods of darkness can reduce mortality and improve leg health.



## litter

Schedule 3 of the Welfare of Farmed Animals (England) Amendment Regulations 2002 (S.I. 2002 No.1646) states that:

- Where any poultry other than those kept in the systems referred to in Schedules 3A, 3B and 3C are kept in a building, they shall be kept on or have access at all times to, well maintained litter or to a well-drained area for resting.

- 54 Meat chickens and breeding chickens spend their lives in contact with litter and their health and welfare are linked to its quality. Conditions such as pododermatitis, hock burn, foot pad lesions and breast blisters are 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 avoid overheating and to remove excess moisture. The feed composition should be well balanced to avoid problems with wet or sticky droppings.
- 55 Litter should be kept loose and friable and measures should be taken to minimise the risk of mould and mite infestation. It should be inspected frequently for signs of deterioration and appropriate action should be taken to rectify any problem. Mouldy litter should not be used. Litter should also be inspected to ensure it does not become excessively wet or dry. A water 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. Advice on litter management is given in a DEFRA booklet – “Poultry Litter Management” - see Appendix 1 - and flock-keepers should familiarise themselves with this advice.

## emergency procedures

- 56 Farmers should make advance plans for dealing with emergencies such as fire, flood, power or equipment failure, or disruption of supplies, and should ensure that all staff are familiar with the appropriate emergency action. At least one responsible member of the staff should always be available to take the necessary steps. Fire precautions should be a major priority for all flock-keepers. Where buildings need to be locked, arrangements shall be made to allow rapid entry in case of emergency.
- 57 Flock-keepers should have access to and be familiar with the content of the DEFRA booklet “Farm Fires” – see Appendix 1. Expert advice on all fire precautions can be obtained from fire prevention officers of local fire brigades and from the Fire Prevention Association.
- 58 Contingency arrangements should be made to ensure that adequate supplies of water and suitable feed can be made available in emergencies. Efforts should be made to minimise the risk of drinking water freezing.

Schedule 1, paragraph 9 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No.1870) states that:

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

Schedule 1, paragraph 10 states that:

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

- 59 The maximum stocking density for chickens kept to produce meat for the table should be 34 kg/m<sup>2</sup>, which should not be exceeded at any time during the growing period. This stocking density is satisfactory for chickens reared to the usual slaughter weights (1.8 - 3.0 kg) but it should be reduced for birds being reared to significantly lower slaughter weights.
- 60 However, a variety of factors need to be taken into account when setting and monitoring stocking densities in chicken houses at levels which promote good welfare. The observance of any particular stocking density is important but cannot, by itself, ensure the welfare of the birds. There is a close relationship between stockmanship, environmental control and stocking density. Birds will be maintained in good condition only if the balance is right and the onus is on the producer to demonstrate that welfare is not compromised, whatever the stocking density.
- 61 Irrespective of the type of system, all 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.
- 62 Stocking density should be reduced and specialist advice taken if problems occur, in particular 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.
- 63 A notice indicating the internal floor area available to the birds should be clearly and permanently displayed at the entrance of each house. This, along with other recorded information (see record keeping, paragraph 73), will facilitate calculation of the stocking density.
- 64 Deliberately placing a high number of chicks and routinely “thinning” should be avoided as this causes unnecessary distress to the birds and may result in stocking densities that are too high.



## automatic or mechanical equipment

Schedule 1, paragraph 18 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) states that:

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

Schedule 1, paragraph 19 states that:

- Where defects in automated or mechanical equipment of the type referred to in paragraph 18 are discovered, these shall be rectified immediately, or if this is impossible, appropriate steps shall be taken to safeguard the health and well-being of the animals pending the rectification of such defects including the use of alternative methods of feeding and watering and methods of providing and maintaining a satisfactory environment.

On artificial ventilation systems, Schedule 1, paragraph 20 states that where the health and well-being of the animals is dependent on an artificial ventilation system:

(a) provision shall 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) shall be provided to give warning of any failure of the system.

Schedule 1, paragraph 21 states that:

- The back-up system referred to in paragraph (a) shall be thoroughly inspected and the alarm system referred to in paragraph 20(b) of Schedule 1 shall be tested at least once every seven days in order to check that there is no defect in the system and, if any defect is found (whether when the system is being inspected or tested in accordance with this paragraph or at any other time) it shall be rectified immediately.

65 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 and inspected regularly and kept in good working order.

66 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.

67 All equipment should be constructed and maintained in such a way as to avoid subjecting the birds to excessive noise.

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

Schedule 1, paragraph 17 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000, No.1870) states that:

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

You should also refer to EU Marketing Standards for Poultrymeat, Commission Regulation (EEC) No 1538/91 (as amended), regarding stocking densities, feed requirements, access to the range and minimum age at slaughter.

- 69 Land on which 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. Land should be frequently monitored for worm burden. 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 to rotating the ranging area outside fixed buildings.
- 70 Sufficient housing should be available to the birds at all times and it may be necessary to exclude birds from the range in bad weather if there is a clear danger that their welfare will be compromised.
- 71 Birds should be encouraged to use the outdoor area by provision of adequate suitable, properly managed vegetation, a fresh supply of water and overhead cover, all sufficiently far from the house to encourage the birds to range.
- 72 Factors such as soil type, drainage and 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 carry fewer birds than land which is light and well drained.



Schedule 1, paragraph 7 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870) states that a record shall be maintained of:

- any medicinal treatment given to animals, and
- the number of mortalities found on each inspection of animals carried out in accordance with the provisions in Schedule 1, paragraph 2.

Schedule 1, paragraph 8 states that the record referred to in paragraph 7 shall be retained for a period of at least three years from the date on which the medical treatment was given, or the date of the inspection, as the case may be, and shall be made available to an authorised person when carrying out an inspection or when otherwise requested by such person.

- 73 Records are an essential aid to management and those kept should include:-
- The number and sex of chicks placed.
  - Daily mortality and the number and average weight of birds removed for slaughter or when thinning the flock to reduce stocking density.
  - Number of culls with reason for cull to be recorded (leg culls to be specifically identified).
  - Where possible, feed consumed (daily and cumulative).
  - Body weight in relation to expected growth rates.
  - The internal floor area of the house.
  - Daily water consumption (water meters should be fitted in each house).
  - Testing and maintenance of automatic equipment, including alarms, fail safes, fire extinguishers and stand-by generators.
  - Daily maximum and minimum temperature.
  - The lighting regime - intensity and duration.
  - Dates of cleaning/disinfection and bacterial counts between placements.
  - Veterinary consultation, date and outcome.
  - Medicine and vaccine administration records.

- 74 Additionally, for the purposes of salmonella control, the breeding sector must keep certain records under the Poultry Breeding Flocks and Hatcheries Order 1993. Full details of the records to be kept can be found in the DEFRA booklet – “A Guide to the Poultry Breeding Flocks and Hatcheries Order 1993”. These records will compliment those detailed above and aid flock management.

The Welfare of Animals (Transport) Order 1997 (S.I. 1997 No 1480) covers the transport of all vertebrate animals, including birds. Among other requirements;

- Article 4 states that no person shall transport any animal in a way which causes or is likely to cause injury or unnecessary suffering to that animal.

- Article 6 states that no person shall transport any animal unless: -

(a) it is fit for its intended journey, and  
(b) suitable provision has been made for its care during the journey and on arrival at the place of destination.

For these purposes an animal shall not be considered fit for its intended journey if it is ill, injured, infirm or fatigued, unless it is only slightly ill, infirm or fatigued and the intended journey is not likely to cause it unnecessary suffering.

- Article 10(1) requires that any person transporting animals shall ensure that the animals are transported without delay to their place of destination.

- Article 10(2) requires that in the case of animals transported in a receptacle, any person in charge of animals shall ensure that they are not caused injury or unnecessary suffering while they are in the receptacle either waiting to be loaded on to the means of transport or after they have been unloaded.

- Schedule 3 (Part I) requires that means of transport and receptacles shall be constructed, maintained, operated and positioned to provide adequate ventilation and air space. Receptacles in which animals are carried shall be constructed and maintained so that they allow for appropriate inspection and care of the animals. Receptacles in which animals are carried shall be of such a size as to protect the animals from injury or unnecessary suffering during transport. Receptacles in which birds are transported shall be constructed and maintained so that they prevent any protrusion of the heads, legs or wings from them.

75 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 to the task. Responsibility for the management of the operation should be clearly allocated.

76 High standards must be applied irrespective of the potential economic value of the birds. Surplus birds or birds at the end of lay awaiting disposal should be treated as humanely as those intended for retention or sale.

77 Panic among the birds and subsequent injury should be avoided. Catching should take place in low or blue light to minimise fear responses. Catching and handling should be carried out quietly and confidently exercising care to avoid unnecessary struggling which could bruise or otherwise injure the birds.

78 Unless they are caught and carried around the body (using both hands to hold the wings against the body), birds should be caught and carried 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.

79 One possible way of avoiding the potential for damage to the birds is to collect the birds mechanically; only devices proven to be humane should be considered for use in gathering birds.

80 The distance birds have to be carried should be minimised by taking the crates and containers into the house. Density in the crates should be adjusted according to weather conditions and size of bird. It is important to ensure that once birds are loaded in the container they are not exposed to extremes of temperature



- 81 Crates or containers should be suitable for the purpose of transporting birds and allow them easily to be put in, conveyed and taken out without injury. They should in particular be protected from rain and road spray which greatly increases the effect of wind chill, although effective ventilation must be maintained.
- 82 Journeys should be carefully planned so that birds are not left on the vehicle for long periods either at the start of the journey or at their destination. The provision of adequate ventilation and protection from adverse weather and extremes of temperature are essential during loading and transport.
- 83 Measures should be taken to ensure efficient removal of excess heat and water vapour. It is important to make use of the natural airflow patterns around a moving vehicle to optimise conditions for the birds during transport. However, when a vehicle is stationary for any length of time, mechanical ventilation may be necessary to maintain acceptable levels of temperature and humidity. When this is the case it is more effective to extract air from the vehicle than to blow air into it.

Schedule 3 (Part II) of the Welfare of Animals (Slaughter or Killing) Regulations 1995 (S.I. 1995 No. 731) as amended by the Welfare of Animals (Slaughter or Killing) (Amendment) Regulations 1999 (S.I. 1999 No. 400) and the Welfare of Animals (Slaughter or Killing) (England) (Amendment) Regulations 2000 (S.I. 2000 No. 3352) requires that animals (including birds) are unloaded as soon as possible after arrival at a slaughterhouse. After unloading, animals must be protected from adverse weather conditions and be provided with adequate ventilation. In addition, if any animal has been subjected to high temperatures in humid weather, it must be cooled by appropriate means.

## breeding procedures

Schedule 1, paragraph 28 of the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870), requires that:

- Subject to sub-paragraph (2) (below), natural or artificial breeding or breeding procedures which cause, or are likely to cause, suffering or injury to any of the animals concerned shall not be practised.

- Sub-paragraph 1 shall 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.

Schedule 1, paragraph 29 states that:

No animals shall be kept for farming purposes unless they can reasonably be expected, on the basis of their genotype or phenotype, that they can be kept without detrimental effect on their health or welfare.

all birds in the house and the amount of trough space allocated should allow access to feed for all birds intended to be fed.

- 87 In no circumstances should breeding birds be induced to moult by withholding feed and water. Withholding feed and/or water is unlawful (see box following paragraph 10). Paragraphs 11, 14, and 18 of this code apply at all times, including when moulting is induced.
- 88 Birds should not be fed on 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.
- 89 For 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. 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 when the water supply is turned back on.

## feed and water

- 84 Breeding birds have been selected over several generations for their genetic potential for large appetites, fast growth and high fertility. Consequently, their husbandry requirements demand committed and competent stockmanship and a high standard of housing and equipment. Control of the environment is essential.
- 85 As in many aspects of husbandry, to promote optimum welfare the amount of feed offered to breeding chickens is a fine balance between offering too much feed (because birds fed to demand would become obese, fail to survive through the laying period and breeding would be severely impaired) and causing suffering due to hunger and starvation. The weight of present evidence is that the overall welfare of the bird is better if feed is restricted. However it is particularly important that the effects on the individual bird are carefully monitored by skilled staff.
- 86 Feeding equipment should be capable of delivering small quantities rapidly, accurately and evenly to

## parent breeding chickens

- 90 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 growth, not less than 7% week-on-week, and the desired weight and condition at point-of-lay.
- 91 Feed should be offered to the birds at least daily throughout the production cycle with the exception of the day before depopulation, when a more generous allocation should be fed in anticipation of fasting the birds before slaughter. Skip a day regimes are not acceptable (they are also unlawful, see box following paragraph 10).
- 92 In addition to routine daily checks, the body weight and condition of the birds should be systematically monitored and recorded on a weekly basis. Prompt, appropriate adjustments should be made to feed allocation according to what is found.
- 93 As the amount of feed offered to the birds is so small its nutritional quality must be carefully



monitored and controlled. The flock-keeper must be particularly vigilant after changes in feed batches.

- 94 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 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.

### elite (pedigree) birds

- 95 Primary breeding companies should identify the best means of minimising the number of elite birds subject to detailed selection performance testing and the age and weight to which they grow on an ad libitum feed regimen. Once the selection procedures are complete, weekly recording of weight gain should be used to check that the birds follow the correct body weight profile to ensure good health and production.
- 96 Because of the constraints to which they are subjected, the management of elite birds during the period of feed restriction (from 8 weeks to point-of-lay) must avoid any other welfare challenge and provide even feed distribution, effective environmental control and avoid disease challenge.

### buildings and accommodation

- 97 Breeding 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 insulation and heaters, ventilation fans and vents, effective lightproofing, and a lighting system providing controllable light levels with uniform distribution.
- 98 To enrich the environment, insoluble grit should be offered (spread on the litter) 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 house.

- 99 Recommended minimum light intensities and photoperiods for breeding birds are:

*up to 10 days* - minimum of 60 lux at day old, reducing to 10 lux and an uninterrupted day length minimum of 8 hours by 10 days of age.

*up to point of lay* - minimum of 10 lux. Uninterrupted daylength minimum of 8 hours.

*laying* - minimum of 20 lux. Uninterrupted daylength increasing from 8 hours to a maximum of 18 hours.

All the above should be measured at bird eye height. If aggression occurs, the lights should be dimmed for a few days.

After the first few days of life, there should be a set period of at least 6 continuous hours of darkness in any one 24-hour period.

### stocking density, freedom of movement

- 100 Stocking density for breeding birds should not exceed 25 kg/m<sup>2</sup> calculated by dividing the total weight of all the birds (males and females) in the house by total area available to the birds. The calculation of stocking density should be on the basis of all stock within the house, including males.

### catching, handling and transport

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

The permitted methods of killing surplus chicks and embryos in hatchery waste are set down in Schedule 11 of the Welfare of Animals (Slaughter or Killing) Regulations 1995 (S.I. 1995 No. 731) as amended by the Welfare of Animals (Slaughter or Killing) (Amendment) Regulations 1999 (S.I. 1999 No. 400) and the Welfare of Animals (Slaughter or Killing) (Amendment) (England) Regulations 2000 (S.I. 2000 No. 3352)

They are:

for chicks-

mechanical apparatus producing immediate death (instantaneous mechanical destruction); exposure to gas mixtures (high concentration of carbon dioxide or argon or argon/carbon dioxide mixture containing not more than 30% carbon dioxide and not less than 60% argon); or dislocation of the neck.

for embryos in hatchery waste -

mechanical apparatus producing immediate death (instantaneous mechanical destruction).

Chicks should always be killed by a skilled operator. Birds must be placed in the highest obtainable concentration of carbon dioxide, supplied by a source of 100% carbon dioxide. When chicks are exposed to gas mixtures, they must remain in the gas mixture until dead. The capacity of any mechanical apparatus must be sufficient to ensure that chicks and embryos are killed instantaneously.

102 When using carbon dioxide or gas mixtures, the operator should check thoroughly to ensure that all birds are dead. When using any of the permitted gas mixtures it is essential that the levels of each gas are monitored and maintained as any build up in the oxygen content will significantly reduce the effectiveness of the system and is likely to result in birds taking longer to die or possibly regaining consciousness. The rate of delivery of birds should be such as to ensure that birds are not crushed or suffocated during exposure to gas mixtures or when passing through a mechanical apparatus.



## useful publications

**Publications available from DEFRA**

<b>PB No.</b>	<b>Title</b>
1147	Emergencies on Livestock Farms
0621	Farm Fires: Advice on Farm Animal Welfare
1315	Heat Stress in Poultry: solving the problem
1739	Poultry Litter Management
3476	Welfare of Poultry at Slaughter: A Pocket Guide
3724	Guide to Alleviation of Thermal Stress in Poultry in Lairage
2594	Explanatory Guide to the Welfare of Animals (Slaughter or Killing) Regulations 1995
2630	Code of practice for the Prevention of Rodent Infestations in Poultry Flocks
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