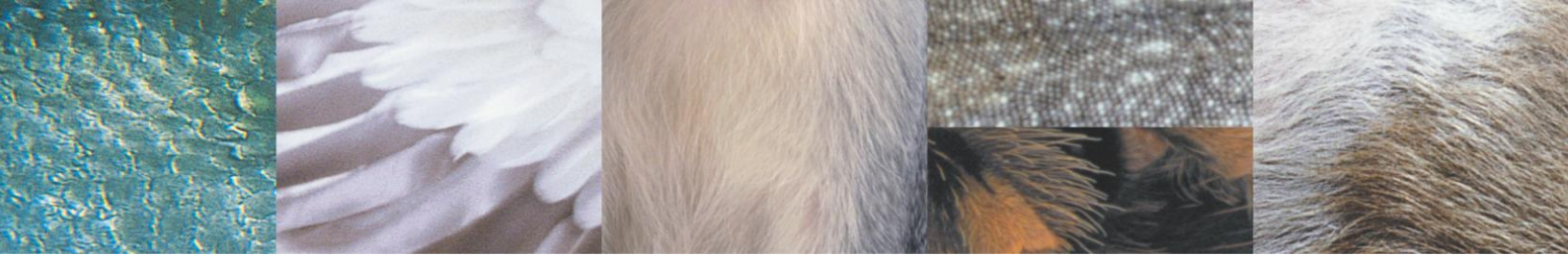

Supplementary resources for members of local ethical review processes

Domestic Fowl: Good practice for housing and care

Research Animals Department, RSPCA
4th edition - April 2011

Before using these guidance notes, please read the introductory sheet that accompanies this series:
Supplementary resources for lay members: an introduction

Natural history

The domestic fowl is descended from the red junglefowl (*Gallus gallus*) and retains much of its biology and behaviour, to the extent that some modern breeds have escaped into the wild and successfully re-established themselves. This means that it is essential to consider the ecology and behaviour of junglefowl when designing husbandry that aims to address the needs of domestic fowl.

Junglefowl are predominantly ground living in tropical and temperate scrub, forest or jungle habitats with plenty of overhead cover. One male commonly lives with two to ten females and their offspring, although they form larger groups including up to around 20 adults in more open environments. Mixed groups have a well-defined home range with a regular roosting location; birds can fly and will roost in trees at night and sometimes during the day. Birds spend up to 75% of the day foraging for seeds, fruits and insects. Maintaining the plumage through preening and dust-bathing is also an important and time-consuming behaviour. Courtship is complex and the female nests in a hollow lined with grass or leaves. The chicks stay with the female until they are 6 to 8 weeks old.

Studies of domestic fowl have also been used to evaluate birds' preferences and motivation for a variety of resources. These have found that domestic birds have definite and strong requirements to live in stable groups, carry out complex courtship behaviours, take refuge under appropriate cover, perch, forage, dustbathe and make nests - all behaviours that are also important to junglefowl.

What domestic fowl need

The following list of requirements has been defined using the ecology and behaviour of junglefowl, and animal welfare science that has evaluated preferences and motivation for resources in domestic fowl. More information on domestic fowl welfare, housing and care can be found in the references listed at the end of this document.

- **Social housing**

Fowl are highly social and should never be housed singly without compelling veterinary or scientific justification. They will establish stable hierarchies if groups are formed when birds are juvenile and housing conditions are right, addressing all of the requirements set out below. Small groups of 5 to 20 birds are best and mixed-sex groups should contain few males, *e.g.* 1 male: 5 females. The risk of aggression will be minimised if the group is provided with sufficient space and a stimulating environment.

- **Solid floor with sand, softwood shaving or straw litter**

Foraging is impossible on a grid floor and fowl strongly prefer litter to a wire floor, so solid floors with appropriate litter material should always be provided to a depth of at least 5 cm. Foraging is extremely important to fowl – they will perform tasks to gain access to foraging substrate and will even forage to feed when alternative food is freely available. Solid floors with litter can also help to prevent feather pecking (see below). If there is compelling scientific justification for a grid area of

floor, *e.g.* for faecal collection, at least a third of the floor should be solid with litter. Perches can be located over grid areas to maximise collection of faeces.

- **At least 15cm of perch per adult bird, preferably 15cm each at a range of different heights**

Perching is a high priority behaviour that makes fowl feel secure – they are highly motivated to perch, especially at dusk. Artificial "dusk" periods, where lighting is dimmed before lights out, will help birds to settle on their perches for the night. Dusk and dawn periods should each last for 30 minutes, to allow the birds' eyes to adapt to the change in lighting conditions. A range of perch heights helps birds to reinforce stable social hierarchies (and allows subordinates to get away from dominant birds). Perching also promotes strong leg bones and good foot and feather condition. Perches should be about 3 to 4 cm in diameter with rounded edges and flat tops, preferably made of wood. They should be located so that birds are unlikely to defaecate on those below, rather than vertically stacked.

- **Dust bath(s)**

Dust bathing is essential for good feather condition and it also appears that birds enjoy it! Fowl have a preference for bathing in materials with small particle sizes such as peat or sand (NB sand is more environmentally friendly). Wood shavings are less preferred and do not penetrate the feathers so well. Dust baths are especially well used if they are provided with extra light and heat.

- **Nest box and nesting material (laying hens)**

Hens become extremely frustrated and stressed if they are deprived of nest boxes. Boxes should be fully enclosed, contain litter such as shavings or straw and be large enough for the hen to turn around. Birds should have access to nest boxes from 16 weeks of age and they should always be provided with one each.

- **Pecking materials and/or objects**

Supplementary objects for pecking can be provided in addition to litter on the floor. These include pecking blocks, brassicas, CDs or turf, all of which will help to prevent injurious pecking.

- **15cm of feeder length per adult bird**

The sight of a feeding bird triggers others to join in, and this length will allow them all access to their food simultaneously.

- **Plenty of pen space**

Sufficient space should be provided to allow for all of the above resources and for a range of behaviours, including exercise and 'comfort' behaviours such as wing flapping, feather ruffling and leg stretching. Proper social interaction is very important to fowl and they need to be able to space out to avoid confrontation and prevent social stress. Hens are also very highly motivated to pace around when they are about to lay.

Cages are not suitable accommodation for fowl and their use should be strongly questioned. If there is genuine scientific or veterinary requirement for caging, such as a need to house birds in isolators or a study that requires egg or faeces collection from known individuals, then cages should have a floor area of at least 0.75 m^2 and enrichment should be provided [see reference 2]. These can be used to house 1 or 2 adult birds, but a nest box should be provided for each laying hen.

Potential husbandry related welfare problems and how to resolve them

Injurious pecking includes self-pecking, feather pecking other birds and vent pecking. All of these can cause extremely serious welfare problems. They are less likely in small groups with sufficient space and access to litter and other pecking materials, but can still develop for no apparent reason. The likelihood of injurious pecking can be reduced by:

- making sure that birds have suitable pecking materials *continually from the first day of life* (which requires communication with the breeder if chicks are bought in). This may be related to feather pecking as redirected foraging behaviour. In addition to litter, consider commercially available pecking blocks or other manufactured pecking devices;
- housing birds in small, stable groups in a stimulating environment with plenty of space;
- choosing strains with a low incidence of injurious pecking where possible.

If injurious pecking occurs occurs, it may be reduced by:

- reviewing husbandry to ensure that birds have enough space and a stimulating environment;
- temporarily reducing light intensity;
- spraying birds with 'anti-pecking spray';
- as a *last resort*, beak tipping using appropriate anaesthesia and analgesia. This causes acute and chronic pain and should *only* be carried out if there is a serious and urgent welfare problem and all other measures have failed. If birds have to be beak tipped, husbandry should also be reviewed immediately – with advice from outside experts if necessary – with the aim of significantly reducing the risk that birds will have to be beak tipped again.

Behavioural frustration is usually expressed as pacing and aggression. A common cause in laying hens is inability to find a nest site in the pre-laying period. To prevent behavioural frustration, make sure that necessary stimuli are provided to encourage a full range of behaviours, such as foraging and pecking substrates and a nest box for each laying hen by 16 weeks of age.

Bone and foot problems are made worse by lack of exercise, poor quality litter and high egg production. Good housing with sufficient perching space improves foot condition and strengthens leg bones. Bone strength varies between strains and rearing systems, so it is good practice to choose strains with good bone strength and/or rear them appropriately. If buying birds in, communication with the breeder is essential to ensure that they have been reared in conditions that facilitate good bone strength.

Domestic fowl housing and care: ERP aide-memoire

- ❖ Social housing in small groups of 5 to 20 birds ❑
- ❖ Adequate pen space to permit a range of activities and the provision of environmental enrichment ❑
- ❖ Solid floor with suitable litter material ❑
- ❖ Perches at a range of heights with at least 15cm provided per adult bird ❑
- ❖ Artificial 'dusk' periods to help settle the birds onto their perches at night. ❑
- ❖ Dust baths with materials of a small particle size ❑
- ❖ Nest box and nesting material for all laying birds from 16 weeks of age ❑
- ❖ Supplementary objects and materials to stimulate and allow pecking behaviour ❑

Notes

Recommended references

1. Duncan IJH (2010) The domestic fowl. Chapter 41 in: *The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals*, 8th edn (ed by R Hubrecht and J Kirkwood), pp 637-654. Oxford: Wiley-Blackwell.

2. Hawkins P, Morton DB, Cameron D, Cuthill I, Francis R, Freir R, Gosler A, Healy S, Hudson A, Inglis I, Jones A, Kirkwood J, Lawton M, Monaghan P, Sherwin C and Townsend P (2001) Laboratory Birds: Refinements in husbandry and procedures *Laboratory Animals* 35 (Suppl. 1) Download at http://tinyurl.com/3aljtmd

3. Fölsch D, Höfner M, Staack M, Trei G (2002) Comfortable quarters for chickens in research institutions. In: *Comfortable Quarters for Laboratory animals,* 9th edn (V & A Reinhardt eds) pp 101-108. Washington, DC: Animals Welfare Institute, www.awionline.org
NOTE: the 10th edition of *Comfortable Quarters* is under production at the time of writing.

4. RSPCA (2008) *Welfare Standards for Chickens.* Download at www.rspca.org.uk/sciencegroup/farmanimals/standards/chickens

5. RSPCA (2008) *Welfare Standards for Laying Hens and Pullets. Download* at www.rspca.org.uk/sciencegroup/farmanimals/standards/layinghens

6. FELASA (2007) *Euroguide on the Accommodation and Care of Animals Used for Experimental and Other Scientific Purposes: Based on the Revised Appendix A of the European Convention ETS123.* London: FELASA. Available for purchase at www.rsmpress.co.uk/bkfelasa.htm

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RSPCA, Research Animals Department
Wilberforce Way, Southwater, Horsham, West Sussex RH13 9RS
www.rspca.org.uk/researchanimals

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