

New requirements for training stockmen have also been specified. Any individual who employs or engages persons to attend to pigs must ensure that those persons have received instructions and guidance.

Further reviews of the Directive are due to be held in 2004 and 2008. The first will report on socio-economic and sanitary consequences, environmental effects, and climatic conditions associated with the new Directive. In addition, the effects of space allowances and floor types and techniques and systems of pig production that will reduce the need for castration will be considered. The second report will include findings on tail-biting, stocking densities and farrowing crates.

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Council Directive amending Directive 91/630/EEC laying down minimum standards for the protection of pigs (2001). Available at [http://europa.eu.int/comm/food/fs/aw/aw\\_legislation/pigs/prop\\_en.pdf](http://europa.eu.int/comm/food/fs/aw/aw_legislation/pigs/prop_en.pdf)

### **The use of genetically modified animals**

“The potential benefits of causing genetic modifications are great but so too may be the costs.” Thus opens the chapter on welfare in the recently published Royal Society report on the use of genetically modified animals. In this chapter, the ways in which genetic modification — and the techniques used to cause it — may affect welfare are outlined. It is concluded that: “Although genetic modification is capable of generating welfare problems, in the view of the Royal Society, no qualitative distinction can be made between genetic modification technology and modification produced by artificial chemicals or radiation. Indeed, the targeted character of modern genetic technology may provide fewer welfare problems than older techniques”.

Following a 16-point summary and a brief introduction, the report includes chapters entitled: What is genetic modification?; Techniques for altering genetic make-up; Uses of GM animals; Safety; Welfare; Weighing benefits against burdens; and Conclusions and recommendations. It provides clear and concise overviews of these issues. Although concluding that the development of GM animals has been hugely beneficial in many areas, the report emphasises that continued research on the welfare and use of these animals is essential if uncertainties about welfare and health and safety issues are to be properly addressed.

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*The Use of Genetically Modified Animals* (May 2001). The Royal Society, Policy Document 5/01. Available from Science Advice Section, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG, UK; <http://www.royalsoc.ac.uk>. ISBN 0 85403 556 7. 46 pp. A4 paperback.

### **Motivation in laying hens: studies of perching and dustbathing behaviour**

Anna Olsson’s doctoral thesis provides information about perching motivation and the effects of social factors on dustbathing motivation in laying hens. The aims of her doctorate were: to study the effect on behaviour of preventing access to perches for night-time roosting; to quantify hens’ motivation for night-time perching and how this is affected by social stimuli; to study how social stimuli affect dustbathing motivation; and, to study the motivational background of sham dustbathing.

The study of night-time roosting showed that as soon as the lights were extinguished, birds began to perch; birds tended to perch close together on the top perch and remained there for the entirety of the dark period. It was also found that birds without access to a perch spent significantly less time sitting ( $P < 0.05$ ) and walked more ( $P < 0.05$ ) than those with access to a perch.

Motivation for night-time roosting was measured using a push-door. Hens pushed through significantly heavier doors to gain access to a room containing a perch than to a room that did

not. It was also found that there was no significant effect of the presence of a perching companion on motivation to perch.

The study on the effects of social stimuli on dustbathing motivation showed that allowing hens the opportunity to observe others dustbathing did not result in increased dustbathing when these subjects were subsequently given access to dustbaths. Dr Olsson also found that hens did not dustbathe more when they were together with a dustbathing hen than when together with a hen that did not dustbathe. Therefore, social facilitation did not seem to act strongly on dustbathing behaviour, although a significant increase in walking ( $P < 0.05$ ) and displacement preening ( $P < 0.01$ ) may indicate that observing dustbathing stimulus hens had an effect on motivation.

Sham dustbathing was also studied in different situations. There was no evidence that sham dustbathing reduced the motivation to dustbathe in litter, or that social facilitation was a possible explanation for sham dustbathing. However, it was shown that previous experience affects the performance of sham dustbathing; some birds continued to do this after they had been given access to litter, and evidence was found to support the hypothesis that the formation of habit may affect the occurrence of sham dustbathing.

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**Olsson A** 2001 *Motivation in laying hens: studies of perching and dustbathing behaviour*. Doctoral thesis, Swedish University of Agricultural Sciences, Uppsala, Sweden.

### **Housing for laboratory rats, mice, guinea pigs and rabbits**

In Australia, institutions carrying out research using animals are required to comply with the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (NHMRC, 1997). This code provides broad standards but, because the scientific knowledge base is constantly expanding, does not specify detailed requirements. ANZCCART has therefore produced this monograph to assist institutions to find their way through the mass of published information and the author, Ann Hargreaves, has carried out a splendid job. Coincidentally, a similar process is underway in Europe, as the Council of Europe is revising its standards for housing laboratory animals. Sensibly enough, the document begins by reviewing measures of welfare that can be used to assess housing and the animals' responses to it. Rightly, the use of operant techniques to assess welfare is emphasised as a valuable method, but it might have been worth pointing out that farm animal ethologists have been using such techniques for a long time. Hargreaves then provides detailed reviews of scientific literature relating to the assessment of welfare and the housing and husbandry of rats, mice, guinea pigs and rabbits.

The monograph provides a useful introduction to animal house climate control. Adequate environmental conditions are crucial to good welfare, and Hargreaves makes the point well that room conditions are not at all the same as the in-cage environment. However, as most laboratories are unable to adequately monitor in-cage environmental parameters, it is not unreasonable that her recommendations refer to the macroenvironment. The important point here is of course that a cage with appropriate enrichment allows the animal to choose its own microenvironment. In view of the increasing use of Individually Ventilated Cages (IVCs), a discussion on the welfare implications of their use would have been a useful addition. It is also slightly odd that the day length recommendations for rabbits appear to be based upon those required to maintain female rabbit fertility. This may not be a priority for animals under experiment.

Hargreaves correctly notes that housing can often be improved without increasing space allowances, although draft documents on rodent housing under discussion at the Council of