Good welfare for the 'Artificial Rearing of Calves' describes how they need contact with other calves, and how much space they require, as well as instructions on feeding from birth.

The next section on 'Cattle Handling Facilities, Mustering and Yarding' provides details on how the physical environment should be designed and maintained to minimise the chance of distress or injury. It also looks at how best to move and handle cattle.

A lengthy section on 'Management Practices' provides guidelines on acceptable treatment of cattle with regards to milking, castration, identification, dehorning, tail docking, mating, calving and weaning, and the marketing of bobby calves. The 'Health' section discusses vaccinations and culling in order to maintain a healthy herd, and outlines treatment protocols to follow if a sick individual is identified. The 'Feral Cattle' section looks at a number of reasons why these cattle need to be controlled, with regards to the welfare of a herd, and methods to minimise distress if feral cattle are to be incorporated into a herd. Lastly, the 'Humane Destruction' section describes the two main methods — firearms and the captive-bolt pistol — and how care can be taken to minimise distress. Two appendices provide further information about water quantity and quality, and also look at feeding more closely, but guidelines are generalised as the provision of suitable food and water will be context-specific.

Model Code of Practice For the Welfare of Animals. Cattle, Second Edition. Primary Industries Standing Committee Report — No. 85 (2005). Published by CSIRO Publishing. 36 pp paperback (ISBN 0 643 09116 5) Available to order from the CSIRO Publishing website at a cost of AU$20.00; http://www.publish.csiro.au/pid/4831.htm

C Salisbury

UFAW

The UK Animals (Scientific Procedures) Inspectorate publishes first Annual Report

The 2004 Annual Report of the Animals (Scientific Procedures) Inspectorate is the first of its kind, providing extensive and detailed information on the work carried out by the Inspectors who ensure that all scientific and medical research involving animals in the UK is carried out in accordance with the Animals (Scientific Procedures) Act 1986. Until now less information has been available on how welfare standards are maintained, but to demonstrate a 'commitment to openness' this has now been made public. A high level of detail is given regarding how Inspectors spend their time, in what areas they give advice, and how visits are carried out, as well as additional activities.

Details about the twenty-nine Inspectors themselves reveal a wealth of expertise with 110 academic degrees and specialist qualifications between them. Despite disparate backgrounds in all fields of medical and veterinary science, both academic and commercial, all assessments are based on the same guiding principles to ensure consistency is maintained.

The Inspectorate's primary areas of work are advising on license applications (for both personal and project licenses) and visiting licensed establishments. It is noted in the Report that projects seeking licenses are becoming increasingly complex, requiring increased research and consideration. With thousands of personal licence applications, and even higher numbers of amendment requests and reviews, Inspectors have on average 35 hours per year per establishment in which to assess the validity of the proposed program of work. Only a minority of applications were approved in 2004 without further information being requested. The Report outlines how applications are scrutinised and all aspects of the work questioned, with alternative methods constantly being explored to uphold the principle of the 'Three Rs'. Where non-animal alternatives are not an option, the level of sentience of the proposed animal is questioned, and the potential benefits, experimental procedures, and the abilities and experience of those applying for the licence must be judged by the Inspector.

The importance of building good relationships with the people involved is emphasised in the Report, as the Inspectors can have a direct influence on how licensees carry out their work. Persuading licensees to adopt better welfare practices is one of the benefits of these good relationships, and examples are given of instances where improvements over and above the terms of a license were implemented in this context. A complementary role of the Inspectors is to educate and disseminate information with a view to improving welfare standards generally, and one aspect of this is the reporting of failed methods — which are often absent from the scientific literature — so as to inform licensees of potentially wasteful research approaches, and thus help to avoid unnecessary suffering of the animals in question.

Visits and their preparation are meant to take up about 40% of an Inspector's time, and their purpose is to ensure that licensees are abiding by the terms of their license. Infringements of these terms are generally rare, but where infringements do occur these are reported to the Secretary of State and suitable action is then taken. This always takes into consideration the extent of the infringement and how much suffering was caused as a result, and in a number of cases administrative error with no harm to the animals involved was identified as the cause.

In addition to the above, the Report describes various other events and initiatives that the Inspectorate has been involved in during 2004. These include participation in the Home Office Primate Stakeholders Forum; a Parliamentary Seminar on Animal Experimentation; and providing technical input to the work of the Animal Procedures Committee which advises government ministers, among many others. At the end of the Report details of non-statutory activities of the Inspectors illustrate the extent to which they have been active in representing the Inspectorate, or the Home Office, at numerous national and international conferences, and providing advice to external groups.

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Animals (Scientific Procedures) Inspectorate Annual Report (2004). Available on the Home Office website at http://scienceandresearch.homeoffice.gov.uk/animal-research/publications/publications/reports-and-reviews/annual-report?view=Standard&pubID=260100

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Floor space allowances and floor types for weaner and rearing pigs — scientific opinion adopted by the Scientific Panel on Animal Health and Welfare (AHAW)

The European Food Safety Authority (EFSA) was approached by the European Commission in 2004 to provide a scientific grounding for potential changes in legislation regarding the welfare of weaner and rearing pigs. EFSA produced a report, and in September 2005 an opinion based on the report was adopted by the Scientific Panel on Animal Health and Welfare (AHAW). The Scientific Panel on Biological Hazards (BIOHAZ) has also adopted relevant points from the opinion, where the hygiene of pig enclosures has a direct impact on human health. Thirty recommendations are made with regard to space allowances and flooring types, and a further nineteen priorities for research are outlined.

The report found that space is related to pig welfare because pigs' normal behavioural range requires enough space to allow free movement, and if space is limited so that normal behaviours cannot be carried out, disturbed behaviours such as belly-nosing and tail-biting may occur. Lying and dunging (defecation and urination) should occur in separate areas to maintain good welfare, and if this is not the case then the likelihood of oro-faecal disease transmission is increased. Enclosures should therefore be large enough to ensure that this separation does occur, although dunging in the lying area can also occur if an animal is stressed, and lying in the dunging area to cool down can occur if temperatures are too hot. These factors must therefore be borne in mind, and efforts made to prevent them.

The main points of the opinion conclude that space requirements increase with increasing temperatures, so appropriate cooling mechanisms need to be in place if additional space is not available. The emission of air pollutants depends on the size of the area that is soiled, its drainage, and the frequency of slurry removal, so space allowances do not affect emissions of this kind. Suitable space allowance is described by the equation:

$$\mathbf{A}\ (\text{space allowance } m^2) = \mathbf{k}\ (\text{constant}) \times \mathbf{W}^{0.67}\ (\text{body weight}^{2/3})$$

For pigs weighing up to 110kg, k = 0.036; for pigs weighing more than 110kg and for all pigs housed in temperatures of more than 25°C, k = 0.047, as pigs will need more space to lie separately.

Overcrowding should be avoided, and age segregation be employed in order to minimise disease risk. Space allowances are not considered to have a significant impact on the outcome of exposure to disease if the infectious agent is highly contagious.

When looking at flooring types, the opinion concludes that different floorings have different impacts on welfare. Slatted flooring can be beneficial in terms of hygiene, with lower levels of morbidity and mortality, because excreta are kept separate from the pigs as it falls though the floor, and it should therefore be used in the dunging area. However, incidence of respiratory lesions can be higher in slatted floor areas if ventilation is poor or if slurry is not removed frequently enough. The flooring itself should be designed to ensure that the gaps are not wide enough for the claw to fit through. The opinion emphasises the importance of good hygiene, facilitated by flooring that is easy to clean and disinfect, particularly as from 2006 there will be an EU ban on the use of antibiotics as a general feed additive. This has implications in terms of post-weaning diarrhoea, and high levels of hygiene will be necessary in order to keep the incidence of diarrhoea low.

Opinion of the Scientific Panel on Animal Health and Welfare on a request from the commission related to welfare of weaners and rearing pigs: effects of different space allowances and floor types (2005). The Summary, the Report, and the Opinion are all available online at the European Food Safety Authority website: http://www.efsa.eu.int/science/ahaw/ahaw_opinions/1203_en.html

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