Reports and Comments

Prize for research showing how to humanely handle mice

Professor Jane Hurst was awarded the UK's National Centre for the Three Rs (NC3Rs) 2011 prize for improving animal welfare at the NC3Rs Annual Review Meeting on the 25th January 2011. The award was given for her publication (Hurst & West 2010) on improving handling methods for mice. Professor Hurst and Rebecca West have shown that the traditional method of handling, in which the mice are picked up by the base of the tail, results in the mice becoming very anxious as well as aversive to further handling. She has also shown that mice can be more humanely handled by, either coaxing them into a tube from which they can be tipped into the hand or another cage, or by cupping them in the palm of the hand. Mice handled in these more humane ways will subsequently approach a hand placed in the cage while traditionally handled mice retreat from the hand and show behaviours indicative of anxiety. As is often the case, good welfare goes hand-in-hand with good science; as while some traditionally handled mice will eventually habituate to being picked up by the tail, some never do, so that this handling method introduces increased variation into research. Further, the researchers found that restraint methods, such as scruffing the mouse or restraining it by the tail, did not result in stress if one of the humane handling techniques had been used. As it has now been demonstrated that traditional handling evokes strong anxiety and that an estimated 40 million mice or more are used worldwide, the potential for improving welfare becomes clear. Moreover, the techniques will also be relevant to those that keep or handle pet mice.

Taming Anxiety in Laboratory Mice (2010). Hurst JL and West RS. *Nature Methods* 7: 825-826. Available at: http://www.nature.com/nmeth/journal/v7/n10/full/nmeth.1500.html.

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New Guidelines on euthanasia from the Canadian Council on Animal Care

Animals used in science may be killed for welfare reasons to prevent unavoidable pain or distress, to provide tissue for research, or to dispose of animals that are no longer needed. Euthanasia is probably one of the least popular of the tasks of animal care personnel, but it is important that it is always carried out in a way that causes the minimum of pain or distress to the animal. Ideally, the pain or distress should be nil, but unfortunately that is not always practically feasible. It is also important that the method chosen should take into account the likely psychological impact on the staff carrying out the procedure and the views of the public, however the welfare of the animal should come first. The Candian Council on Animal Care (CCAC) recent publication (see details below) on euthanasia provides 10 guiding principles to help ensure that it is undertaken as humanely as possible. The document also provides an overview of acceptable methods of euthanasia for various groups of species used in research. This takes into account the results of recent research and some traditional methods of killing animals have been reassessed. For example, there have been increasing concerns, and a number of papers, regarding the use of carbon dioxide to kill rodents and in these guidelines, the use of this gas, on its own, is relegated to a conditionally acceptable method which needs particular ethical justification. The Guidelines refer to an addendum, which was not published at the time of writing but is intended to provide information about the potential impact of particular euthanasia methods on research results.

CCAC Guidelines on: Euthanasia of Animals used in Science (2010). A4, 36 pages. Published by the Canadian Council on Animal Care. ISBN: 978-0-919087-52. Available at: http://www.ccac.ca/en/CCAC_Programs/Guidelines_Policies/PDFs/Euthanasia.pdf.

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Voluntary European Declaration signed on alternatives to pig castration

Across the European Union approximately 250 million pigs are reared annually to supply the pig meat market and the vast majority of males are surgically castrated before they are one-week old. Castration of piglets occurs for management reasons (to reduce aggression, lessen unwanted mounting behaviour, and prevent unplanned pregnancies) and to decrease the probability of 'boar taint'. Boar taint occurs in some carcases due to the presence of skatole and androstenone and may be perceived by consumers as unpleasant. Entire, male pigs are most likely to be affected by boar taint (although some female pigs are also affected) and production systems which slaughter animals at higher weights, eg between 100 and 110 kg, frequently castrate all male piglets routinely since these animals are more likely to have reached puberty and there is some association between puberty and taint (additionally if animals have reached puberty then there is a chance that females may become pregnant before slaughter). Sensitivity to boar taint varies between people and there are also differences between countries as to its acceptability (eg consumers in France, Germany and Spain find boar taint highly unacceptable whilst consumers in the UK less so). Carcases with a pronounced taint are considered unfit for human consumption.

It is widely accepted, due to behavioural and physiological indicators, that castration is painful, however in the vast majority of cases when castration is carried out, anaesthesia and/or analgesia are rarely used. This is a welfare concern and one which a number of key stakeholders within the pig industry are beginning to address through voluntarily agreeing to a European Declaration on alternatives to surgical castration of pigs. The Declaration has been signed by many key groups within the pig industry, including: COPA-COGECA (European farmers and European agri-co-operatives), VDF (German meat industry association),

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Danish Agriculture and Food Council, LTO Nederland (Dutch pig farmers organisation) and FVE (Federation of Veterinarians for Europe).

Signatories have agreed that, as of 1 January 2012, the surgical castration of piglets may only be carried out if prolonged analgesia and/or anaesthesia is used, and that by 1 January 2018, castration may not be performed at all (although castration will still be permitted in production systems registered under 'traditional specialties guaranteed' or with 'geographical indications').

To assist with meeting the deadline for castration, a European partnership on pig castration has been set up with financial support from the European Commission. The aim of this group is to facilitate the carrying out of seven key tasks laid out in the Declaration, such as: agreeing on a common understanding of boar taint; co-ordinating research on methods for recognising boar taint; exploring means of reducing boar taint through breeding (some breeds, eg Duroc, are particularly prone to boar taint, whilst others, eg Hampshire, have naturally low levels); investigating production systems and management of entire males during rearing, transport and at slaughter to reduce sexual and aggressive behaviours; and carrying out a cost/benefit analysis on prohibiting castration.

The focus of the Declaration is on co-operation between interested parties, including the sharing of any costs associated with prohibiting castration, and it is hoped that other operators within the pig industry will join this voluntary initiative and assist with improving the welfare of pigs throughout the EU.

European Declaration on Alternatives to Surgical Castration of Pigs (December 2010). Voluntary declaration signed by key stakeholders in the pig industry. For further information, please visit the following website, available at: http://ec.europa.eu/food/animal/welfare/farm/initiatives_en.htm.

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Online learning resource available on pig production, welfare and meat quality

Q-PorkChains is an EU-funded research project in which 62 organisations from 19 countries are involved. One output of the project is the Q-PorkChains Open Learning Platform (OLP), an online learning resource covering the pig production industry and pork quality. The OLP provides freely available teaching resources to anyone interested in the pig industry and programmes are divided into modules (chain management, consumer, pig production, product quality) and categories (animal welfare, consumer behaviour, education, meat quality, pork chain, product development, sustainability). Many of the learning resources are provided in a number of different languages.

Within the animal welfare category there are nine learning resources available. Resources vary between explanatory video presentations, such as demonstrating a rapid test for detecting elevated acute phase protein levels in pigs, to a more lecture-style format, eg covering animal welfare-friendly pig housing systems in which users are led through key points of the subject area using notes, charts and video, and which culminates in a self-assessment test. Once users have completed an online course then they have the option of evaluating and feeding-back on their experience of the learning programme.

The long-term goal of Q-PorkChains OLP is to develop a sustainable and dynamic learning resource for use by teachers, trainers, students and employees in the pig production and pig meat industry. It is hoped that such an open and community-type platform will enable people to share their learning experiences and users are invited to contribute to the OLP by submitting their own teaching and learning resources.

Q-PorkChains Open Learning Platform (2011). EU Project funded via the EU 6th Framework Programme, 2007-2011. Q-PorkChains OLP is available at the following website: www.pork-training.org.

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Defra publishes review of the UK Animal Welfare Research Programme 2005–2010

In 2009/2010 approximately £32.5 million of the Department for Environment, Food and Rural Affairs (Defra) research budget was allocated to animal health and welfare research and, of this, £2.9 million was spent on animal welfare research specifically. The Defra animal welfare research programme consists of seven sub-programmes: on-farm poultry; on-farm pigs; on-farm ruminants; on-farm fish; companion animals and game birds; transport and markets; and slaughter. The results from research within these areas are utilised by Defra to ensure that existing animal welfare policies are based on scientific evidence, to identify the need for new policy development and to support Defra in its regulatory role.

In December 2010 Defra published their *Review of the Animal Welfare Research Programme 2005–2010*. The aim of this review was to: evaluate completed and current research projects; to assess the current animal welfare research programme in relation to current policy needs; and to consider the future direction and priorities of the programme. To achieve these aims a panel of Defra officials and external referees considered each of the seven sub-programmes within animal welfare under the following headings: Success of research in providing value to Defra; Issues and areas of concern relating to this research; Research gaps and future priorities; and Balance of funding.

Review of the Animal Welfare Research Programme 2005–2010 (December 2010). A4, 44 pages. Published by the Department for Environment, Food and Rural Affairs. Further information about this publication and copies are available from: Animal Welfare Research Programme Manager, Veterinary Research Unit, Nobel House, Area 4A, 17 Smith Square, London SW1P 3JR.

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