

The Boyd Group and the RSPCA. 45 pp, A4 ringbound. Published by and available from the Royal Society for the Prevention of Cruelty to Animals Research Animals Department, Wilberforce Way, Southwater, Horsham, West Sussex RH13 7WN, UK.

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Welfare aspects of stunning and killing methods for food animals

At the request of the European Commission, the Scientific Panel on Animal Health and Welfare of the European Food Safety Authority (EFSA), under the Chairmanship of Dr H Blokhuis, recently undertook a review of the main systems for stunning and killing the main commercial livestock species. The Panel had been asked to address, for each method used, and in the context of both routine slaughter and killing for disease control purposes:

- minimal conditions for efficient and humane use under field conditions;
- criteria for checking stunning and killing;
- advantages and disadvantages of the method in commercial and field conditions.

The Panel's report was published in June 2004. This is a very thorough and detailed review in which a considerable number of research priorities for the future are identified. Among the general conclusions are:

- "... the ability to move animals in groups with less handling and restraint is an advantage on welfare grounds of all gas stunning or stun/killing systems as compared with mechanical or electrical methods."
- "While carbon dioxide has many advantages, aversion ... to this gas at some level (usually above 20%) is clearly a welfare problem. Depending on how one interprets an animal's behaviour it is difficult to quote a level that will apply to all pigs and poultry. However, it is likely that levels above 30% in pigs and turkeys and 25% in chickens are at the least very unpleasant and that higher levels are aversive."

A variety of high research priorities relevant in the context of slaughter of animals for food are identified, and these include:

- development of appropriate methods for both mechanical and electrical stun and stun/kill methods;
- development of a field tool for measuring the velocity and power of captive bolts, and research to establish appropriate captive bolt dimensions for each species;
- that: "there is an urgent need to revise and scrutinise the electrical methods";
- that aversion to gas mixtures and the mental state of animals during the induction of unconsciousness needs further evaluation;
- development of humane gas mixtures and systems for pigs;
- further investigation to determine more humane gas mixtures for poultry;

- development of humane slaughter methods for species of farmed fish for which no commercially acceptable methods exist at present;

- as regards gas methods for killing for disease control, the report states that carbon monoxide is suitable for poultry and piglets and that although exposure to 90% carbon dioxide is very aversive, it may be the most practical.

Although, as a review, this report contains little new information, it will be of great interest and relevance to all those involved with livestock killing and slaughter and especially to those involved with directing research and technological developments in these fields.

Aspects of Animal Stunning and Killing Methods (June 2004). Opinion of the Scientific Panel for Animal Health and Welfare on a request from the Commission related to welfare aspects of the main systems of stunning and killing the main commercial species of animals, *EFSA Journal* 45: 1-29 (2004). 29 pp A4, with a 241 pp detailed annex to the report. Published by European Food Safety Authority -AHAW/04-027. Available at http://www.efsa.eu.int/science/ahaw/ahaw_opinions/catindex_en.html.

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Suffering and severity: report of a session at the Laboratory Animal Science Association's winter meeting

A session on suffering and severity with respect to the use of animals in research was held at the winter meeting of the Laboratory Animal Science Association (LASA). The subject was topical as the Boyd group (a UK-based forum for open exchange of views on issues of concern related to the use of animals in science) has recently completed a series of workshops on the perceived value of severity classifications under the UK Animals (Scientific Procedures) Act 1986. In addition, the European Commission is considering severity, among other issues, for its review of European Directive 86/609, and the UK's Animals Procedures Committee (APC), together with LASA, is developing a pilot study on a potential retrospective scheme to score suffering actually experienced by animals as part of its review of the published statistics on animal use in UK research.

Presentations given at the meeting focused on the purposes of assessing animal suffering and of assessment practicalities. The assessment of suffering is complicated by the fact that different species may show different indications of suffering, and that some of these signs are not obvious. Moreover, the experience of suffering changes by individual, by that individual's past experiences, and even as a result of the circumstances at the time of assessment. Nonetheless, accurate assessment of suffering is necessary in order to refine procedures, to carry out a harm/benefit analysis of proposed procedures and projects, and to provide public accountability. To do all these things there is a need to obtain a consensus on the causes of suffering, a