Oslo, 28 January 2010

Tasks needed to increase implementation of the 3Rs in fish research

Introduction

Norway's consensus-platform for Replacement, Reduction and Refinement of animal experiments, Norecopa (www.norecopa.no) arranged an international consensus meeting on Harmonisation of the Care and Use of Fish in Research 22-24 September 2009. This meeting was a sequel to a similar event in Oslo in 2005. The participants have produced a consensus statement summarising the challenges within fish research. This meeting, and the preparations for it, have generated a good deal of discussion about specific tasks needed to increase the implementation of the 3Rs within areas that have not been sufficiently addressed since 2005.

Purpose of this document

This document summarises the views of the Board of Norecopa of those tasks that should be performed to increase implementation of the 3Rs.

Many of these tasks will require their own expert working groups. It is Norecopa's hope that this document, or later versions, may be helpful for institutions planning fish research, for working groups, and for those wishing to highlight areas where work remains to be done.

This document may be replaced at a later stage by a revised document, as progress is made.

Specific areas needing attention (Norecopa's order of priority):

1. The production of a list of Categories of severity (non-invasive, mild, moderate and severe) for procedures on fish, with an adequate number of relevant examples within each category, to supplement the report of the EU working group from July 2009 (http://ec.europa.eu/environment/chemicals/lab_animals/pdf/report_ewg.pdf).
2. The development of an English-language handbook and web-based course modules in "Laboratory" Animal Science for fish researchers, that also covers research in the field.
3. The re-evaluation of current regulatory requirements for *in vivo* trials during the development and testing of fish vaccines, both to replace and reduce the use of living animals.

4. The production of standardised fish within the most relevant species used in research
5. The production of species-specific recommendations for assessment of humane endpoints and for the detection of positive and negative welfare indicators.
6. The production of science-based, species-specific, recommendations on best practice within, among other areas:
    a. procedures including capture, identification, housing and isolation of individuals, handling, immobilisation, injections, blood sampling and humane killing (these should be supplemented by websites containing film and photographs of the procedures)
    b. telemetry
    c. anaesthesia (including induction and recovery) surgery and analgesia
    d. statistical methods of relevance to research on fish in a farm setting
    e. the care and use of fish species, in a similar format to the literature-based recommendations that now form part of the latest version of Appendix A of ETS 123
7. The production of species-specific guidelines on health monitoring of the commonly used fish species (preferably both for breeding units and experimental units, along the lines of FELASA guidelines, and as a sequel to the general guidelines published by Johansen *et al.* in 2006 (http://la.rsmjournals.com/cgi/reprint/40/4/323).
8. Behavioural research to develop better methods for determining optimal water quality and environmental enrichment for each relevant fish species.
9. The impact of REACH on the use of fish for the safety assessment of chemicals.
10. The production of a databank of protocols for use in fish research, as an aid to increase the use of the best methods, and to avoid repetition of suboptimal techniques.

On behalf of Norecopa

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