European Convention for the Protection of Vertebrate Animals used for Experimental and Other Scientific Purposes

Proposals for revision of Appendix A of the Convention
– concerns accommodation and care of animals

Species Specific Provisions for Fish

Prepared by group of experts and agreed by the working party for the preparation fo the 4th multilateral consultation of parties to ETS 123

To be submitted to the multilateral consultation in 2005

What were the problems?

- Large number of fish species used for experimental purposes in Europe
- 40+ species
- Wide variety of habitats

- In many cases their biological requirements are poorly known
- Thus it has been difficult to be very specific in provisions
- Concentration on general principles
- Provides a European-wide framework for welfare of fish in experimental situations

- Aspects covered include:

  Environment and its control

  Water supply

  Water quality:- oxygen

  nitrogen compounds

  carbon dioxide

  pH

  salinity

  Temperature

  Lighting

  Noise

  Salinity

Health

- General
- Hygiene and disinfection
- Quarantine

Housing and enrichment

- Social housing – stocking density
- Environmental complexity
- Enclosures: - aquarium buildings
  enclosure systems

Feeding

- Cleaning of tanks
- Handling
- Humane killing
- Records
- Identification

Transport

- Fish are ectothermic and thus highly adapted to their particular aquatic environment

- React very rapidly to stress with immediate and long-lasting physiological cosequences

- Water quality is most important factor in maintaining well being of fish
- Must be within acceptable range that sustains normal activity and physiology
- Optimum not necessary well defined – may vary between life stages

- Fish show varying degrees of adaptation – acclimatisation to changes may be necessary
- Water supply must be adequate to ensure adequate oxygen and removal of nitrogenous water
- May need to be filtered to remove harmful substances

- Temperature must be monitored in optimal range for life-stage of fish. Acclimatisation may be necessary

- Lighting is an important cue for many behavioural and physiological functions. Photoperiod should be ambient as far as possible

- Fish can be acutely sensitive to sounds, even at very low levels

- Health of fish intimately bound up with environmental and husbandry conditions
- Most diseases associated with deficiencies in these conditions
- Any attempt to control disease must address these factors or disease will recur

- Fish health management is normally concerned with populations rather than single individuals and control measures must be designed accordingly

- Stocking density will be influenced by fish behaviour, e.g. schooling, territorial behaviour and conspecific aggression. Should be sufficient volume for normal swimming

- Acceptable stocking density for a given species will depend on fish size, age, health, feeding method, water flow and current

- Environmental enrichment may be necessary to take account of behavioural traits in some species. Care must be taken to ensure enrichment does not actively affect water quality

- Enclosures (tanks, cages) should be of appropriate size to accommodate the required stocking density and to allow for behavioural needs and preferences

- Enclosures should not allow fish to be physically damaged and should be readily cleaned and disinfected

- Fish may be fed on artificial diet or fresh/frozen food.
- Feeding rate and frequency are very important
- Presentation of diet and size of food items must be taken into account

- Fish may be severely stressed by handling which must be kept to the minimum possible
- Fish should normally be anaesthetised before handling
- Care must be taken to avoid physical damage during handling

Humane Killing

- Overdose of anaesthetic
- Concussion of brain
- Confirm death

Records

Maintain records of water quality parameters

Identification

- Not always necessary to identify individual fish
- Use least invasive method where possible
- Normally use anaesthesia

Transport

- Starve before transport
- Avoid physical damage and stress
- Avoid severe and abrupt environmental changes

- Supporting evidence to be provided in part B In Preparation
- Will include some species-specific information