

Europe suggest that some of the existing minimum standards may be too small to allow adequate enrichment. The species-specific sections provide very readable reviews of the literature that discuss in some detail issues such as cage dimensions and social environment. Each chapter ends with recommendations but while these, for example, recommend the use of pens rather than cages for rabbits, they do not specify minimum dimensions. It is, of course, true that science alone cannot provide such figures, but only data that in general support an opinion. Nonetheless, reality demands that either legislators or institutions have to come off the fence. Hargreaves' monograph is therefore an excellent contribution to the literature which will be useful to all those involved in laboratory animal husbandry, but she does not provide all of the answers.

A L Hargreaves 2000 *Housing for Laboratory Rats, Mice, Guinea Pigs and Rabbits*. Published by The Australian and New Zealand Council for the Care of Animals in Research and Training Ltd, ANZCCART New Zealand, P O Box 598, Wellington, New Zealand; <http://anzccart.rsnz.govt.nz>. ISBN 0 9586821.

Live animal transport: recent reports

On 9 April 2001, the European Commission adopted a report¹ and a proposal² aimed at improving the standards of ventilation, temperature and humidity control in lorries carrying horses, cattle, goats, sheep and pigs on journeys longer than eight hours. The proposal, for a 'Council Regulation amending Regulation (EC) No 411/98 as regards ventilation in road vehicles carrying livestock on long journeys', will be adopted by the Council and also submitted to the European Parliament for an opinion. The aim of the proposal is to improve existing Community rules on the protection of animals during transport. Under current legislation there is an obligation to transport animals with officially authorised transport companies, to adhere to maximum loading densities and to comply with maximum travel times. In addition, a route plan must be authorised prior to the commencement of a journey over eight hours, upgraded vehicles must be used and resting times at approved staging points must be completed to allow the animals to be fed, watered and rested.

The new regulations are based on the advice of the Scientific Committee for Animal Health and Animal Welfare and on a Commission report, which identified animal welfare problems during long distance transport. The Scientific Committee concluded that thermal stress is one of the major factors reducing the health and welfare of animals during transport. They also noted that improving ventilation reduces mortality during travel and promotes better standards of animal health upon arrival at the destination. The committee defined the following temperature and humidity ranges as being within acceptable limits for transportation of the aforementioned species:

Species	Weight/age/type	Min temp °C	Max temp °C	
<i>Relative Humidity</i>			< 95%	≥ 95%
Pigs	10–30 kg	14	32	29
	30+ kg	12	32	29
<i>Relative Humidity</i>			< 80%	≥ 80%
Cattle Domestic Equidae	Up to 2 weeks	10	30	27
	2 to 26 weeks	5	30	27
	26+ weeks	0	30	27
Sheep	Full fleece	0	28	25
	Shorn	10	32	29
Goats		6	30	27

Vehicles must be equipped with forced ventilation systems to ensure that the above measures are achieved, and these must provide even distribution throughout, with a minimal airflow of a nominal capacity of $60 \text{ m}^3 \text{ h}^{-1} \text{ KN}^{-1}$ of payload. The systems must be capable of operating at full capacity, independently of the vehicle engine, for at least 12 h. The Scientific Committee also recommended that vehicles should have a monitoring and warning system that records temperature and humidity. This will allow the driver to take remedial action when necessary. The records will facilitate the verification of compliance by the competent authorities; they shall be available to the competent authorities on request, as defined by Directive 91/628/EEC, from the time of departure to 30 days after completion of the journey.

It is estimated that the cost of implementing these new rules will be between three and five per cent of the total cost of a lorry. Once the Council has adopted the proposal, new vehicles will have to be equipped according to the new standards from 1 January 2002. Older vehicles will have to meet the new standards no later than 31 December 2003.

¹ Report from the commission to the council and the European parliament on the application of the different ventilation systems for animal transport vehicles for road journeys exceeding eight hours. Commission of the European Communities, Brussels (April 2001). COM(2001)197 Final Volume I.

² Proposal for a council regulation amending Regulation (EC) No. 411/98 as regards ventilation in road vehicles carrying livestock on long journeys. Commission of the European Communities, Brussels (April 2001). COM(2001)197 Final Volume II.

Available at http://europa.eu.int/comm/food/fs/aw/aw_transport_init_en.html