

deer where they are concentrated as a result of supplementary feeding.

- Research, evaluation and monitoring — in particular, the Highways Agency and the Deer Initiative are to continue with their research and ongoing monitoring of road traffic accidents involving deer, and non-lethal methods of management.

Other sections include the venison market, linking grants to sustainable deer management, management of public estate land, regional and local strategies, and implementing and reporting progress.

**The Sustainable Management of Wild Deer Populations: An Action Plan** (December 2004). Published by Defra and the Forestry Commission. 7 pp A4 paperback. Available at [http://www.forestry.gov.uk/pdf/deerstrategyengland301204.pdf/\\$file/deerstrategyengland301204.pdf](http://www.forestry.gov.uk/pdf/deerstrategyengland301204.pdf/$file/deerstrategyengland301204.pdf)

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### Improving lamb survival

About 15% of lambs are lost each year in the UK; a significant proportion of the national stock. In addition to the associated morbidity being a matter of serious welfare concern, this also has major financial implications. The main causes of lamb death are exposure, starvation, infectious diseases, congenital defects, predators, and misadventure, all of which will invariably involve a certain degree of suffering and a reduction of welfare. This booklet aims to increase survival rates through better planning, better organisation of lambing routines and facilities, and good stockmanship.

Much of the booklet focuses on measures that ensure lambs are born in the best possible condition; topics covered include practices prior to servicing and during pregnancy (including ram management), health and welfare programmes for the ewe from weaning to lambing, condition scoring, and ways to reduce stress. Many of these measures not only benefit the lamb, but also help to improve the welfare of the ewe. For example, excessive handling or disturbance and excessive use of dogs should be avoided where possible, as stress can impair maternal behaviour; measures to reduce stress will also benefit the ewe in her own right.

A number of easy-to-use reference guides are provided throughout the text, including a comprehensive table outlining the feed requirements of both lowland and hill sheep at various stages of late pregnancy (single and twins), a list of the basic housing requirements (with particular attention paid to heat stress), and a checklist for turnout to ensure that the lamb is ready (ie has it sucked?; has the navel healed?; has it been fed colostrum?). Symptoms of hypothermia and a flow chart of what action to take in such an event are also presented.

There are several appendices listing details such as (1) what provisions should be stored (including parturition equipment, veterinary supplies, survival kit, surgical

equipment and miscellaneous items); (2) how to feed colostrum (including quantities) using a stomach tube; (3) a diagram of a lamb warming box; and (4) when and how to give a glucose injection. The need to develop strategies in conjunction with appropriate veterinary and technical advice is mentioned throughout, as are various codes of recommendations and guidance leaflets, whilst readers are directed to more specific Defra publications on a number of topics on which further information is required. This booklet will be very useful to those responsible for the care and management of sheep.

**Improving Lamb Survival** (2004). Published by Defra. 24 pp A5 paperback. Available at <http://www.defra.gov.uk/animalh/welfare/farmed/sheep/pdf/lamb Survival.pdf>

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### Refining dog husbandry and care

According to this report, which is concerned with the issue of refining laboratory dog husbandry and care in order to avoid or minimise suffering and improve welfare, an estimated 140 000 dogs are used in research and testing worldwide every year. It is the eighth in a series of reports produced by Joint Working Groups on Refinement convened by the British Veterinary Association Animal Welfare Foundation (BVA/AFW), the Fund for the Replacement of Animals in Medical Experiments (FRAME), the Royal Society for the Prevention of Cruelty to Animals (RSPCA), and the Universities Federation for Animal Welfare (UFAW).

The report is split into six main sections, each concerned with a particular aspect of laboratory dog welfare, along with relevant background information, advice, and recommendations where applicable:

- (1) Background information on the use of dogs in research and testing, including data on the numbers and breeds used, the purpose of use, source, and existing legislation.
- (2) The natural history and behaviour of the dog in relation to its husbandry and care, including discussion of ancestry and dominance, senses and communication, interpreting dog signals, aggression, abnormal behaviours, stereotypies, and temperament.
- (3) Management of laboratory dogs, including housing and the physical environment eg pen size, stocking density, group versus single housing, the provision of outdoor areas, lighting, temperature, ventilation, noise, facility design and construction, and husbandry practices. Food and feeding, health and hygiene, identification and record keeping are also discussed in detail.
- (4) Breeding, including breeding systems, the selection of breeding stock, care of the whelping bitch, and balancing supply and demand.
- (5) Practices employed for, during, and after experimental use, including socialisation, habituation and training,