

Animal Science

Editorial: Farm Animals and Biodiversity

Grazing animals cause major alterations to vegetation structure and botanical composition through their selective grazing, trampling and excretal deposition (Hester *et al.*, 2005). Through these effects they modify habitats and thus the populations of invertebrates and other organisms at higher trophic levels. Herbivores are thus key drivers of ecosystem function and nutrient dynamics within grazed plant communities. Changes in grazing intensity and the species mix of grazing livestock can therefore have important implications for resulting biodiversity. Ongoing reform of the European Union Common Agricultural Policy (CAP) will lead to a shift in the way financial support for livestock is distributed and hence to changes in grazing management practices. Farmers will increasingly receive financial support subject to cross-compliance with various environmental conditions and for delivery of specific environmental and social objectives. In some areas, livestock are likely to be increasingly viewed as tools for habitat management rather than solely as producers of food and other commodities.

Against this backdrop of policy change the British Society of Animal Science and the British Ecological Society organized a joint symposium at the BSAS Annual Meeting in April 2005 on the links between farm animals and biodiversity. Four papers from this symposium are presented as mini-reviews in the current issue of Animal Science.

David Oglethorpe set the policy context in his review of the environmental implications of CAP reform (Oglethorpe, 2005). His paper highlighted the likely changes in the livestock sector that will ensue including a polarization of agriculture into intensive producers versus environmental managers, increasing extensification in the uplands and some substitution of beef with sheep. Jerry Tallowin then presented a review of the impact of grazing management on grassland biodiversity (Tallowin *et al.*, 2005). His paper showed that lenient grazing pressure by cattle in species-rich grassland was sufficient to maintain botanical diversity but did not enhance it over a 5-year period. For species-poor grassland, grazing management could alter sward structure but, in the absence of seed sources, botanical diversity was resistant to change. There is obviously much research still to be done in this area to support the development of suitable agri-environment measures under Pillar 2 support mechanisms. David Buckingham went on to consider the extent to which grassland management might influence habitat quality for farmland birds (Buckingham and Peach, 2005). His paper showed that the exacting requirements of declining granivorous birds pose the greatest challenges while the needs of soil invertebrate feeding species are more easily met under agri-environmental schemes. In the final paper by Bruno Martin, the influence of pasture diversity on cheese quality was the theme (Martin *et al.*, 2005). This paper reviewed recent work, primarily from France, which has examined the links between the diet of grazing animals and the sensory characteristics of various Protected Designation of Origin cheeses. The review highlighted the sometimes subtle, but none the less important influence of the grazing environment on food quality.

The purpose of the symposium was to draw together animal scientists, conservation biologists, ecologists and socio-economists to consider the changing rôle of farm livestock within the new 'decoupled' economic environment. Judging by the popularity of the symposium and the vibrant nature of the discussion that followed each paper, there are plenty of issues still to consider and the hope is that some of the contacts made at the meeting will yield fruitful collaborations in the future.

Alan Duncan
Convener

References

- Buckingham, D.L. and Peach, W.J.** 2005. The influence of livestock management on habitat quality for farmland birds. *Animal Science* **81**: 199-203.
- Hester, A.J., Bergman, M., Iason, G.R. and Moen, J.** 2005. Impact of large herbivores on plant community structure and dynamics. In *Large herbivore ecology and ecosystem dynamics* (ed. K. Danell, R. Bergstrom, P. Duncan and J. Pastor), in press. Cambridge University Press.
- Martin, B., Verdier-Metz, I., Buchin, S., Hurtaud, C. and Coulon, J.B.** 2005. How does the nature of forages and pasture diversity influence the sensory quality of dairy livestock products. *Animal Science* **81**: 205-212.
- Oglethorpe, D.R.** 2005. Livestock production post-CAP reform: Implications for the Environment. *Animal Science* **81**: 189-192.
- Tallowin, J.R.B., Rook, A.J. and Rutter, S.M.** 2005. Impact of grazing management on biodiversity of grasslands. *Animal Science* **81**: 193-198.

