



**ANIMAL WELFARE IN THE DEER INDUSTRY:
A PROVOCATIVE VIEW
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Public perceptions of the welfare status of deer will have a major impact on the sustainability of the industry since products derived from unacceptable farming systems may be boycotted. This threat must be taken seriously. The sale of Norwegian products nosedived following the recent decision by Norway to resume whaling operations. For New Zealand deer products the threat would appear to be greatest for venison, since over 80% of the income from meat products is derived from sales to the welfare-sensitive markets of Europe and North America. Conversely, the majority of the sales of velvet products are to welfare-insensitive markets.

Ironically, the practice that causes most concern in the welfare-sensitive markets, and which is most likely to reduce consumer acceptance of New Zealand venison, is the harvest of velvet. Thus, the sustainability of the venison industry will be highly dependent on maintaining and enhancing public perceptions of welfare standards in both the venison and velvet industries.

The differences between countries in attitudes to velveting highlights the key role of public perceptions in determining the acceptability of farming practices. Within countries, attitudes and perceptions differ widely between various sectors of the community. A recent survey by Matthews *et al.*, (1994b) in New Zealand showed that the general public were much less accepting than farmers and veterinarians of practices which severely curtail the freedom of animals to behave normally. Farmers were more concerned about practices that lead to poor nutrition, and veterinarians were most concerned about animal distress and pain associated with routine surgical procedures (such as castration, dehorning and taildocking) and poor health.

The concerns of deer veterinarians appear to mirror those of the general veterinary population. An analysis of the papers published over the last five years in the Proceedings of the Annual Conferences of the New Zealand Veterinary Association Deer Branch showed that almost all of the reports on animal welfare by deer veterinarians focussed on animal health or surgical procedures (velvet removal).

It is clear, then, that the general public and deer veterinarians would not share the same views on which deer farming practices give rise to the most welfare concern. In order to sustain public acceptance of deer farming it will be increasingly important for veterinarians and others involved in the deer industry to address the public's concerns.

This can be illustrated by the following example. A recent study of mortality in deer herds (Audigé *et al.*, 1994) showed that about 20% of all calves born died soon after birth. Thus, neonatal mortality is clearly a significant welfare issue. The causes of the deaths were attributed to dystocia.

(22%), poor maternal behaviour (14%, eg abandonment), or to calf behaviour (8%, eg separation from the mother by seeking shelter in a neighbouring field)

It is highly likely that in the normally quite barren farm paddocks the hinds and calves are unable to display their normal patterns of behaviour during the peri-parturient period. In the wild, hinds normally give birth in secluded areas which assists mother-offspring bonding, and reduces the risk of stress and dystocia. Traditionally, veterinarians might have begun to address the issue of calf mortality by focussing on the incidence of dystocia and breeding practices. The general public would be more likely to demand an improved paddock environment which would facilitate the expression of normal behaviours (in both the hind and neonate) and, thereby, lift survival rates. Therefore, addressing public concerns has the potential not only to raise the image of deer farming, but also to improve deer welfare and farm profitability.

OTHER ISSUES

Velvet removal

The issue that causes most concern in the welfare-sensitive markets is the harvest of velvet. Unlike some of the other practices causing concern, there has been a concerted effort by veterinarians, researchers and regulatory authorities to evaluate the welfare implications of velveting, and to develop improved practices and standards for carrying out the operations. Recent research (Matthews et al, 1994a) has shown that administration of lignocaine hydrochloride as a ring block (20-25ml / antler) provides effective analgesia during and following the operation. Mechanical restraint in a drop floor crush, which is sometimes used to hold stags for velvet removal, induces a significant stress response but the process of cutting the velvet does not seem to add further to the levels of stress (as measured by plasma cortisol).

Thus, the welfare of stags does not appear to be significantly affected by the velveting process, yet the procedure remains unacceptable in the EU, as evidenced by the recent banning of the practice in Ireland. There remains, then, a significant challenge for veterinarians and other welfare agencies to ensure that approved procedures only are used for velvet removal and that the absence of significant deleterious effects on deer are well publicised. Even so, the distinct possibility remains that sectors of the general public in the EU will continue to disapprove of the practice and may actively avoid purchasing agricultural products of New Zealand origin.

Shelter

It is well-known that the most commonly farmed deer species (red deer) typically inhabits the bush-pasture margin when living in undisturbed natural environments. The trees provide protection from predators, the elements and competitors (other red deer). Many paddocks on deer farms are devoid of shelter and this may influence deer welfare including that of the calf, as described above. Recent studies (Hodgetts, 1994) have shown that, when given the opportunity, newborn red deer calves spend about 50% of their time lying in shelter. The shelter is used to provide protection from both the cold and heat. The relatively high rate of usage of shelter suggests that the neonate may be better able to regulate body temperature (and have improved

welfare) in the presence of shelter. Thus, veterinarians could help improve deer welfare and public acceptance of deer farming if greater emphasis was placed on encouraging changes to the paddock environment on farms.

Transport and pre-slaughter handling

The welfare-sensitive markets of Western Europe are particularly concerned about the way farm animals (but particularly deer) are transported and held prior to slaughter. Several papers at earlier Deer Branch conferences have highlighted the potential welfare risks during the pre-slaughter period. Hathaway and Selwyn (1991) mentioned poor ventilation on transporters, and the mixing of unfamiliar animals during transport or in holding pens both of which can result in deaths, bruising, wounds and fractures. Killorn (1993) indicated that some animals are transported in velvet or are transported too soon after the removal of velvet. Both of these situations can result in unacceptable injuries to the velvet or pedicle.

Other areas of concern mentioned by Killorn (1993) include overcrowding on transporters or in yards and the unloading of animals down steep internal ramps (from the upper decks of double deck transporters).

Deer can travel well with minimal stress, dehydration and trauma (Jago and Matthews, 1994) provided that they are transported according to the accepted standards (Code of Recommendations and Minimum Standards for the Welfare of Animals Transported within New Zealand, 1994). However, there is room for improvement in animal welfare during pre-slaughter handling.

One survey has shown that acute trauma incurred during the pre-slaughter handling process affects about 1.5% of red deer (Selwyn and Hathaway, 1992). A second study (Jago *et al*, 1993) reported that, over a 12 month period, about 7% of carcasses at one slaughter plant were downgraded due to wounds or bruising. In addition, we have conducted a survey of temperatures in commercial transporters and showed that pen temperatures are about 5°C higher than the ambient temperature, and can be as much as 10°C higher. Therefore, when the external temperatures exceed 25-30°C there is considerable potential for deer to become heat stressed during transport.

Regulatory authorities (primarily the MAF veterinary inspection service) are stationed at each slaughter plant to ensure compliance with welfare standards. The challenge for veterinarians then, is to ensure continuing improvement in the pre-slaughter handling of deer by, to paraphrase Hathaway and Selwyn (1991), inspection staff taking action when welfare issues are detected. The "action" that veterinarians can take is, of course, not limited to prosecution. As Jermy (1994) pointed out, "the vet's role is changing from one of protector to professional advisor". Recent research (Matthews *et al*, 1994b) demonstrates that veterinarians are well placed to act in an advisory role since it was shown that all sectors of the community would (1) readily seek advice from veterinarians on animal welfare issues, and (2) have no difficulty accepting the input of veterinarians to animal welfare standard setting procedures. Not surprisingly, then, veterinarians are heavily involved in the quality assurance (QA) programmes being developed by the deer.

industry to ensure consistency of handling and other practices on-farm, in transit and at slaughter plants.

Veterinarians are obliged, then, to use their privileged position to.

- (1) Monitor and identify practices that risk the welfare of deer. In so doing it will be increasingly important for veterinarians to view welfare issues from the public point of view
- (2) Initiate appropriate actions (eg research, education, prosecution) to resolve welfare issues and ensure consistency of application of the industry QA standards

REFERENCES

- Audigé, L, Wilson, P R and Morris, R S 1994 Deer mortality profile Proceedings of a Deer Course for Veterinarians, No 11 251-256
- Code of Recommendations and Minimum Standards for the Welfare of Animals Transported within New Zealand 1994 Animal Welfare Advisory Committee
- Hathaway, S C and Selwyn, P 1991 Meat inspection and venison quality Proceedings of a Deer Course for Veterinarians, No 8 36-39
- Hodgetts, B V 1994 Use of artificial shelter in a farm situation by red deer (*Cervus elaphus* L) Unpublished Masters thesis, University of Waikato
- Jago, J G, Matthews, L R, Hargreaves, A L and van Eeken, F 1993 Preslaughter handling of red deer implications for welfare and carcass quality Proceedings of a Deer Course for Veterinarians, No 10 27-39
- Jago, J G. and Matthews, L R 1994 The effect of distance transported on behaviour, physiology and carcass quality of farmed red deer (*Cervus elaphus*) Proceedings of a Deer Course for Veterinarians, No 11 167-176
- Jermy, C 1994 Interface between the Veterinarian and the deer farmer Proceedings of a Deer Course for Veterinarians, No 11 6-12
- Killorn, K J and Heath, C 1993 Welfare concerns at a D S P Proceedings of a Deer Course for Veterinarians, No 10 23-26
- Matthews, L R., Carragher, J F and Ingram, J.R 1994a Post-velveting stress in free-ranging red deer Proceedings of a Deer Course for Veterinarians, No 11 138-146
- Matthews, L R, Loveridge, A M and Guerin, B 1994b Animal Welfare Issues and Attitudes in New Zealand Report to the Agricultural and Marketing Research and Development Trust and Ministry of Agriculture and Fisheries
- Selwyn, P and Hathaway, S 1992 Diseases and defects of slaughtered farmed deer Proceedings of a Deer Course for Veterinarians, No 9 13-18