FARM ANIMAL WELFARE COUNCIL

THE ANIMAL WELFARE IMPLICATIONS OF THE HARVESTING OF DEER ANTLERS IN VELVET

REPORT

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REPORT ON THE ANIMAL WELFARE IMPLICATIONS OF THE HARVESTING OF DEER ANTLERS IN VELVET

1. The Council was asked to consider the animal welfare implications of the harvesting of antlers in velvet from live deer and to make recommendations concerning the procedure by the end of March. A Working Group consisting of the following members was appointed to examine the question and report back to the Council:—

Professor R J Harrison MD DSc FRS
Mr C H Armstrong
Mrs M A S Bates BSc (Agric)
Rev A L Birbeck MA
Professor J M M Cunningham CBE BSc (Agric) PhD
Mrs R Harrison
Mr H F C Hebeler FRCVS
Dr D W B Sainsbury MA BSc MRCVS
Professor A J F Webster MA Vet MB PhD MRCVS

The Working Group held four meetings and received written and oral evidence from the organisations and individuals listed in Appendix A to this report.

Background

2. During the period of their growth, when the antlers consist of soft osteoid tissue which is vascularised and covered with skin and short hair, they are said to be in velvet. Antlers amputated while in velvet are used in traditional medicine in some countries of the Far East where they fetch high prices. Various countries supply this market, including, in recent years, New Zealand where deer farming has been developed on a substantial scale and is continuing to expand.

Deer farming in Great Britain is at present in its infancy. There are known to be at least 14 farms and many places where herds are managed in parks and on estates. This industry is expected to grow considerably and the existence of a profitable export market for antlers in velvet is of much interest to deer farmers here. The question therefore arises of whether such amputation, or harvesting, is compatible with animal welfare.
Anatomy of the antler

3. The males of almost all species of deer, and the females of one species, grow antlers and shed them annually. They develop from a pedicle which is a permanent bony outgrowth of the frontal bone of the skull. The point of junction with the pedicle is called the coronet. Growth starts in the spring and continues for about 6 months, developing through the growth stage, when the tissue is similar to soft bone, to ossification and ultimate hardening followed by shedding of the layer of velvet. When the antlers are in the growth stage, or in velvet, there exists beneath the outer covering of velvet a layer containing blood vessels and nerves. The mature antler is a bony structure which does not have a blood or nerve supply and loses its velvet by degeneration and fraying. Velvet which strips off naturally in this way is of no commercial value. The pedicle does not undergo the same cycle and is permanently provided with nerve and blood supplies. After natural shedding of the antlers, the pedicle develops a cap which is shed when the new antlers begin to grow. The nerve supply to antlers of deer is similar to the nerve supply to the horns of goats.

4. The optimum time for the amputation of the antlers in velvet is a comprise between allowing as much growth as possible to have occurred, in order to obtain the maximum quantity of the product, and ensuring that ossification has not progressed so far as to have an adverse effect on its commercial value. Antlers are usually removed when they are half or two-thirds grown. The duration of the optimum time for removal from any one animal can be as little as three days. Visual appraisal and handling play a large part in selecting the animal and in determining when to amputate.

Procedures in New Zealand

5. In New Zealand, antlers in velvet are taken primarily from live red deer and there are three main stages to the procedure: the collection of the animals, anaesthesia and amputation, and recovery and care after amputation.

Collection

6. Experience has shown that suitably designed pens and handling facilities are important as well as separation into small groups a few weeks before amputation to enable the animals to become familiar with each other. The sensitivity of deer and their rapid reaction to stimuli, which makes them flighty animals, also requires quiet, relaxed handling and penning at all times so as to avoid behaviour which could result in injury.
7. We understand that in New Zealand, antlers in velvet frequently are amputated following administration of the drug xylazine. Although the sedative effects of this drug are satisfactory, its analgesic properties are relatively poor even when dosage levels are such as to render the animal deeply sedated. A local anaesthetic may be used in conjunction with xylazine but this procedure is not widely employed because of the skill required to achieve satisfactory blocking of the nerve supply to the antler. An alternative method sometimes used involves physical restraint of the deer and the use of local anaesthesia alone. The animal is restrained with leather straps against a wall in a darkened pen previous to blocking of the antler nerve supply. In capable and experienced hands good anaesthesia is said to be obtained and the risks of complications following the use of sedative drugs or general anaesthetics are avoided.

A drug which has been employed widely in New Zealand for the amputation of antlers in velvet is a neuroleptanalgesic drug fentanyl which at correct dosage levels can produce a high degree of analgesia. We are advised that fentanyl is not available for use in Great Britain in a suitable formulation but that a comparable neuroleptanalgesic drug, etorphine, suitable for use in deer, is available. It is possible to achieve a high degree of analgesia using etorphine, sufficient for the performance of minor surgery, but there is doubt in the minds of some veterinary surgeons as to whether the sensation of pain is ever completely eliminated. Both fentanyl and etorphine are extremely potent drugs which, if accidentally administered to man even in minute doses can result in narcosis, coma and death.

8. Before the antlers are amputated, a tourniquet, often of baler twine, is usually applied, either above or below the coronet. Application below the coronet necessitates manual removal within an hour or so but above the coronet the tourniquet falls off within a few days after shrinkage of the remaining velvet.

9. The velvet is incised with a knife at a site above and avoiding the coronet and the transection is completed usually with a saw but embrotomy wire may also be used. Shears have been used but they are known to cause too much damage to the velvet and to result in irregular re-growth of the antler.
10. Following amputation without the use of a tourniquet, arterial bleeding is profuse at first but slows after two or three minutes and is negligible after ten minutes. The stump may be left untreated or sterile gauze may be applied.

Recovery and care after amputation

11. When tranquillisers have been administered, care is necessary during recovery to place the animals in a position which will avoid the risk of bloat and possibly harmful twisting of the neck. We have been told that recovery from the operation and resumption of normal behaviour, such as grazing, is quick with no ill-effects being apparent. Infections of the removal site are said to be most uncommon and flystrike is said not to be a problem.

12. The arguments presented to us in favour of harvesting antlers in velvet from live deer were that:—

(i) provided antlers in velvet were removed hygienically and painlessly, there should be no objection. The operation, humanely carried out, was felt to be “less stressful than ear-tagging, and about as stressful to a stag as is shearing or dipping to a sheep. Compared with animal castration, spaying, caponisation, and de-tailing and de-horning, those involved in the practice believe it is very much less stressful”. One of the farming interests stated that “little work has been done on the nervous supply to stags’ antlers but it seems that they are not so susceptible to pain as some people imagine.”

(ii) antler velvet at present world prices would be a useful additional source of income for deer farmers primarily engaged in producing venison.

(iii) since antlers needed to be removed from farmed deer once they had become hard, for the safety of the stockmen and to prevent the animals damaging each other when farmed, they could equally well, and more safely, be removed when in velvet since antler in velvet sold for much higher prices than were obtainable for the mature bony antler.

(iv) stags which had had their antlers removed were not necessarily disadvantaged in the rut. Hummels — stags which never developed antlers — could successfully maintain a harem of hinds. If all stags in a group had their antler velvet removed at the same time, dominance would be determined primarily by size and weight: so effectively hierarchy was not changed.
(v) removal of the antlers in velvet at the right time for harvesting was beneficial to the deer because, if left to grow, they might attract headfly in the later stages of velvet growth if it was damaged and this could cause the animals considerable distress.

(vi) there was no evidence that irritation from headfly would be a serious problem or that flystrike would occur following the removal of antlers in velvet.

13. Arguments against the removal of antlers at the velvet stage of growth were that:—

(i) at that time the operation was not necessary to safeguard the welfare of stags or the safety of the stockmen and that the only reason for removal was to provide income for the producer.

(ii) the removal of antlers in velvet was an unnecessary mutilation and should be opposed.

(iii) innervation of the antlers of red deer was reported to resemble closely the nerve supply to the horns of goats. Although with practice local anaesthesia of the goat horn was possible, many veterinary surgeons admitted to the difficulties they experienced in achieving it in practice. Consequently it was now common for veterinary surgeons to de-horn and disbud goats only under general anaesthesia. However, the use of a general anaesthetic under the field conditions which might exist on many deer farms was regarded as impracticable because of the care and attention required during post-anaesthesia recovery.

(iv) no other operation carried out on live animals was seen as quite comparable to the amputation of antlers in velvet. In the case of de-horning cattle, the purpose was to prevent injury and it was carried out once in a lifetime and, in any case, had now largely been replaced by disbudding.

(v) the procedure could not be justified in the interest of the animals to avoid any distress or pain which any animal might suffer from the natural process of shedding the velvet at a later stage.
(vi) post-operative recovery from anaesthesia and healing of the scar involved some discomfort in addition to the presence of a wound exposed to infection. Because of the nature of the species and depending on the degree of distress, varying degrees of stress could be involved. There was also the stress of being handled and subjected to removal procedures and it was suggested that repeated subjection to the operation could increase stress. It was also thought that, in some geographical locations, the removal of antlers could coincide with the emergence of the headfly and that attacks on antler stumps before healing was complete could cause severe distress to the animals.

Discussion

14. Our concern has been to determine whether the amputation of antlers in velvet is likely to cause the stags subjected to this procedure pain or distress and, if so, whether there are sound ethical, economic or other reasons which would make that pain or distress necessary.

15. There is no information available to us about the pharmacological value of antlers in velvet nor have we any reason for discounting its possible efficacy. At this time, however, we consider this situation to be irrelevant to our main consideration. In our opinion, there is no need for this country to contribute to the supply of antler velvet.

16. As far as the economic situation is concerned, we have been advised that prices for antler velvet are at present of the order of £100 per kg and that, on average, a red deer produces about 1.4 kg. We are also aware that the prices obtainable from selling antlers in velvet could increase the income from deer farming and could make deer farming a more profitable use of marginal land. While accepting this economic analysis, we consider that it is insignificant when weighed against welfare and ethical considerations.

17. We see no reason to doubt that antlers in velvet are sensitive tissue and we have, therefore, considered whether amputation can be carried out painlessly. The use of analgesic drugs would generally reduce the level of pain, but not necessarily eliminate it. Consequently, we do not consider that the use of analgesic drugs alone would be acceptable. Neither do we consider that local anaesthesia alone would be acceptable since, because of difficulties in administration, there could be no guarantee that in all cases it would be fully effective. We have come to the conclusion, therefore, that general anaesthesia would be the only satisfactory method of ensuring the absence of pain in all cases. However, the difficulties and dangers associated with the
use under field conditions of a general anaesthetic in deer make that procedure impracticable.

18. We also consider that the whole procedure involved in removing antlers in velvet must subject the stags to considerable stress which would be experienced once and perhaps even twice each year.

19. In addition to these practical considerations, we have also had regard to the ethical aspects of harvesting antlers in velvet from live deer and we have concluded that there is no over-riding need on medical, veterinary or husbandry grounds for amputating antlers in velvet and that the economic value of the product should not prevail against these other considerations. We believe that it would be wrong to mutilate deer in this way and we therefore recommend that the removal of antlers in velvet from live deer should be prohibited.

20. We also recommend that the prohibition of the amputation of antlers in velvet should not preclude the de-antlering of a deer by a veterinary surgeon on veterinary grounds.

21. We fully accept that it may be necessary under some husbandry systems to remove the hard insensitive antlers from stags for husbandry purposes before the rut.

22. Although the welfare of park and feral deer is outside our terms of reference, we nevertheless wish to record our view that protection afforded to farmed deer against the harvesting of antlers in velvet should apply equally to park and feral deer.

**Recommendation**

23. We recommend that the harvesting of antlers in velvet from live deer should be prohibited in Great Britain.
ORGANISATIONS AND INDIVIDUALS WHO GAVE WRITTEN OR ORAL EVIDENCE

The following gave written and oral evidence

Sir Kenneth Blaxter FRS
British Deer Farmers Association
British Deer Society
British Veterinary Association
Farm Animal Welfare Co-ordinating Executive
Highlands and Islands Development Board
Red Deer Commission
Royal College of Veterinary Surgeons
Royal Society for the Prevention of Cruelty to Animals
Mr C Young, Colin Young Deer Farming Services

The following gave written evidence

Central Council of Societies in Scotland for the Prevention of Cruelty to Animals
Council of Justice to Animals and Humane Slaughter Association
Council of Scottish Agricultural Colleges
Mr R S Cowie MRCVS
Mr J Eadie, Hill Farming Research Organisation
Farm and Food Society
Farmers' Union of Wales
Miss B Gurden
International Society for the Protection of Animals
Dr R M B Kay, Rowett Research Institute
Miss B Partington
Ms J M Pinkney MRCVS
Mrs M McCullagh MVB MRCVS
The National Trust
Mr G A M Sharman, BSc (Vet Sc) MRCVS, Rowett Research Institute
Somerset County Council
Sister Sylvia
Mr D G Talbot
United Kingdom and Irish Societies for the Prevention of Cruelty to Animals Liaison Committee
Universities Federation for Animal Welfare