

VELVET HARVESTING MORAL, ETHICAL AND LEGAL ASPECTS

P R WILSON
DEPARTMENT OF VETERINARY CLINICAL SCIENCES
MASSEY UNIVERSITY

1. Introduction

Farming stags for velvet antler production is an established component within the deer industry. In the 1988/89 financial year export returns of approximately \$25 million.

To date the velvet industry has not been particularly contentious in this country. In the late 1970s the veterinary profession was approached by an animal welfare organisation for advice about the practice of velvet harvesting, and the SPCA has kept a watching brief. In 1984 controversy arose after publication of some photographs on velvetting in a German magazine. Subsequently a new New Zealand Television documentary programme featured velvet harvesting and this created some public comment. Since then the Veterinary Association's Animal Welfare Committee has been publicly active in other welfare areas, e.g. myxomatosis in rabbits, and mules operation on sheep, but has not been involved with the velvetting issue.

In 1987 a forum aimed at heightening the awareness of those in New Zealand agriculture about animal welfare issues was held at Invermay. While this concentrated largely on experimental animals and research, there were clear messages for the farming sector. Overseas there have been significant moves by animal rights organizations to intimidate those conducting hitherto accepted farming systems, e.g. battery rearing of hens and pigs. Such groups, along with more moderate welfare organisations, have brought about a change in attitude toward farming systems, and these have been supported by government legislation in the UK and other European countries (e.g. Sweden).

In Britain the growing deer industry has been plagued by groups concerned about animal welfare. Such activity has resulted in the prohibition of velvet antler removal in that country, and controversy has raged about the transport of live deer and the abattoir slaughter of deer. Representation on both these issues has been made to the British Minister of Agriculture by the Farm Animal Welfare Committee (FAWC).

New Zealand to date has not seen many examples of radical animal rights group activities. However, if overseas experience is recognised, it is likely that such activity will increase in this country. Recent changes to the Animal Protection Act relating to the ethical requirements for animal research have been a positive example of the influence of animal welfare concerns. It would appear logical that farming practices in New Zealand will come under ever greater scrutiny by animal welfare and animal rights organisations.

This paper discusses the moral, ethical and legal aspects of stag farming for velvet, velvet harvesting, and the paradox which the veterinary profession may face if animal rights and animal welfare groups target the velvetting industry. I have attempted to be objective in writing this paper and its contents are not intended to form the basis of policy and no inference of my own belief or views should be taken from this paper.

2. Velvet antler removal

2.1 Justification

2.1.1 Animal injury

The natural behaviour of deer is to establish a dominance hierarchy within a group, and for dominant stags to form and defend a harem at mating. The aggressive nature of stags especially during the rut, i.e. when hard antlers are present, predisposes to a wide range of injuries. This problem is exacerbated in the farmed environment where stags are often kept unnaturally close together, where subordinate stags may not be given the freedom to escape the aggressor, and where stresses of handling, yarding and transport are often manifest by aggression toward other deer. In the natural environment establishment of dominance orders and maintenance of harems

against incursion from other stags does result in a range of injuries, but these appear less serious than when deer are managed in a confined environment. The deer farmer, therefore, has a moral responsibility to minimise such risks.

In New Zealand there is little debate about this issue. However, if self-protection was the major justification, then antlers could be removed at a time when they are not innervated. The opposing argument for this is that when antlers are hard the stags are usually more aggressive, and therefore the risk factor at the time of antler removal increases. Another alternative is to disbud the calves, prior to pedicle development (Asher, 1986). However, this is not always successful and is a procedure that inflicts considerable trauma.

The British experience of farming stags with antlers has highlighted a number of problems. Injuries and losses of deer do occur, but most "sensible" farmers remove the hard antler as soon as velvet is cleared (J. Fletcher, pers. comm.). However, in the British situation relatively fewer stags are kept, since the reason for existence beyond the optimum age for carcass production is for breeding sires. Vastly more mixed-age stags are farmed in New Zealand than are required solely for breeding purposes.

2.1.2 Human injury

An antlered stag has the capability of inflicting more serious injury on handlers than a non-antlered stag, either in the paddock or in the yard environment. Therefore if procedures such as drenching, vaccinating, diagnosis and treatment of disease, and changing stags during the rut etc., which are often necessary for the wellbeing of the animal, are to be performed, then clearly this can be achieved much more safely when antlers are not present. A chilling example was the serious injury of a woman attempting to remove a child who had strayed into a paddock with antlered stags present (J. Fletcher, pers. comm.).

2.1.3 Self injury

During yarding, handling and transport, soft antlers are prone to injury, probably resulting in severe pain and stress to the individual. This is particularly likely to happen in yearling stags transported to a DSP while in soft velvet.

Stags in hard antler are more prone to entanglement in fences, particularly electric fences. Occasionally antlered stags lock together when fighting and this has been observed as a cause of death in feral deer populations.

2.1.4 Profit

Velvet antler farming is clearly a very profitable form of livestock farming at current prices. It is the profit motive that encourages farmers to retain stags for the sole purpose of velvet antler harvest. Recent velvet price rises have resulted in the retention of large numbers of stags, otherwise destined for slaughter, for this purpose.

The situation with breeding stags is somewhat different. A certain number of stags is necessary for breeding operations. Financial return for velvet antler from these stags could be seen as an opportunistic bonus return from those animals. One may speculate on how many breeding sires would be velveted if velvet was not a lucrative by-product. In that circumstance it is likely the farmer would choose to remove the antler once hard, thereby possibly avoiding the need for drugs and veterinary costs. This is common practice in the UK.

2.1.5 Other

An interesting suggestion has been made that removal of velvet antlers decreased irritation by biting flies. It has been observed in Britain that *Hydrotea irritans* is particularly bothersome to stags in soft antler.

2.2 Is stag farming for velvet a moral issue?

The farming of stags for the purpose of harvest of a live vascular and innervated tissue is a unique situation in this country. Velvet harvest is an annual event. There are a number of procedures performed on other animals, e.g. tail docking, mulesing, castration, de-horning and blood and antiserum collection, which involve removal of living tissue from an animal. Indeed, many of these procedures are undertaken without analgesia. In some senses the justification, i.e. for management requirements, for many of these procedures is the same as for removing antlers from stags. With the exception of blood and antiserum collection, however, the latter events are performed only once in the animal's lifetime.

A fundamental question could therefore be: is it morally acceptable to farm stags for velvet?

The *Animal Rights* philosophy, that the animal has equal rights to the human being and therefore the human race has no right to manipulate animals for their purposes, would clearly oppose velvet harvesting. The industry obviously disagrees with this philosophy.

The activities of *animal welfare* groups to date have been more circumspect, and while clearly not enamoured by the prospect of wide-scale velvet harvesting, groups such as the SPCA appear to have taken the view that the procedure is acceptable only if it complies with the requirement of the Animal Protection Act (see later).

The veterinary profession has clearly avoided the philosophical issue. Instead its policy is to the effect that "where the need arises for velvet antlers to be removed from stags they must be removed without pain or suffering inflicted upon the animal, and that the whole operation of removal should be performed by or under the direct personal supervision of a veterinarian."

The original policy used the term "must be performed by or under the direct personal supervision of a veterinarian". However, this word was later changed to should, and this was seen by many as a relaxation of the NZVA's view on the supply of drugs for velvet harvesting. The New Zealand Deerfarmers' Association likewise does not have a policy on the farming of stags for velvet removal. That organisation does have a policy on the act of velvet antler removal: "...that velvet antler should only be removed under proper analgesic procedures" (D. Hickman, pers. comm.).

2.3 The UK position

2.3.1 Background

Velvet harvesting from stags is banned by law in Britain. The Welfare of Livestock (Prohibited Operations) Regulations 1982 prohibit the "removal of any part of the antlers of a deer before the velvet of the antlers is frayed and the greater part has been shed", unless -

- a. "The rendering, in emergency, of first aid for the purpose of saving life or relieving pain, or
- b. performed by a veterinary surgeon where in his opinion:
 - i. disease or injury is present, and
 - ii. the proper treatment for the disease or injury is, or includes, the operation".

However, it is particularly pertinent from the deer farming industry's perspective and the veterinarian's perspective to have a full understanding of the fundamental pretexts of the British situation.

The British law is based on a recommendation from the Farm Animal Welfare Council 1980, entitled *The animal welfare implications of the harvesting of deer antlers in velvet*. The composition of the Council at that time included three veterinarians along with two agriculturalists, a medical doctor, a Church minister and two lay people, and an independent report was solicited from the British Veterinary Association. The Farm Animal Welfare Committee report contained the following:-

Background
Anatomy of the antler
Procedures in New Zealand
Collection
Recovery and care after amputation
Arguments presented in favour and against harvesting of velvet antlers
A discussion of the relevant points and a final recommendation that "we recommend that the harvesting of antlers in velvet from live deer should be prohibited in Great Britain".

The arguments presented to the FAWC in favour of velvet antler harvesting are similar to those in section 2.1.

- (i) The operation humanely carried out was felt to be "less stressful than ear-tagging and about as stressful to a stag as shearing or dipping to a sheep compared with animal castration, speying, caponisation and de-tailing and de-horning. Those involved in the practice believe it is very much less stressful".
- (ii) Source of income to the farmer
- (iii) If antlers are to be removed the best time to do it is during velvet
- (iv) De-antlered stags are not necessarily disadvantaged during the rut, provided all stags are de-antlered
- (v) Removal of antlers in velvet protects the stag from later harassment from head fly
- (vi) Problems after velvetting are rare

Arguments against the removal of antlers in stags presented to the FAWC are as follows (these are direct quotes):-

- "(i) At the time the operation was not necessary to safeguard the welfare of stags or the safety of the stockman, 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 practise. Consequently it was now common for veterinary surgeons to de-horn and disbud goats only under general anaesthesia. However, the use of general anaesthetic under field conditions which might exist on many deer farms was regarded as impractical because of the care and attention required during post-anaesthetic 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 (primarily for the sake of reducing meat wastage from bruising in beef animals) and it was carried out only 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 involves 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 head t₁, and that attacks on antler stumps before healing was complete could cause severe distress to the animals".

In the discussion on this issue the FAWC considered the following:

- there were concerns to determine whether 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.
- The FAWC concluded there is no information available about the pharmacological value of antlers in velvet, but they considered that to be irrelevant to their main consideration.
- While the FAWC accepts the economic analysis of velvet harvesting, they considered that argument insignificant when weighed against welfare and ethical considerations.
- An important conclusion related to the issue of pain: "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 will 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 in all cases that 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, difficulties and dangers associated with use under field conditions of general anaesthetic in deer make that procedure impracticable". They conclude that the procedure of velvetting subjects the stag to considerable stress.
- The FAWC also concludes that "...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 overriding 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 considerations".

However, the Farm Animal Welfare Committee did conclude that:

- the prohibition of the amputation of antlers in velvet should not preclude the de-antlering of deer by a veterinary surgeon on veterinary grounds.
- The FAWC accepts that it may be necessary under some husbandry systems to remove the hard and insensitive antlers from stags for husbandry purposes before the rut.

2.3.2 Comments on the FAWC report

New Zealand veterinarians, experienced in antler removal, may have difficulty in accepting the conclusion that it is difficult to provide satisfactory analgesia with local anaesthetics, and that general anaesthesia in the farmed environment is impracticable.

The majority of the FAWC had little or no experience of deer farming or deer veterinary practice. Many of the other conclusions made by the FAWC largely become a matter of opinion. However, Sir Kenneth Blaxter, who was Director of the Rowett Research Institute which was involved with deer farming research as early as the 1960's, is quoted as calling the act of velvet harvesting "barbaric". The views of people held with such respect carry considerable influence.

The report was also written at a time when deer farming was barely beginning in Britain and no industry had been established. It is probable that considerably more opposition would be expressed if such a report were commissioned now, once the industry had become more established.

It is difficult to know how much significance to place on the UK situation, and its relevance to New Zealand, given the factors that gave rise to the policy. Is the UK and California (see 2.4) out of step with the rest of the world in this regard (or *vice versa*?). Or can the UK and Californian policies (and attitude toward animal welfare as a whole) be seen as a lead that the rest of the world will eventually follow?

The debate over velvet removal in the UK is not at rest. It has even been alleged that the FAWC report was a capitulation to the animal welfare lobby to achieve credibility at the expense of only a small opposition.

2.3.3 The implications of banning velvetting

Veterinarians in Britain may remove antlers after the animal has experienced pain, e.g. after fracture or bruising, even in situations where there is a high risk of injury, e.g. transport or quarantine housing. This is seen by some veterinarians as a paradox; the question is whether controlled pain of surgical removal under analgesia for antler removal from all stags in the group is more or less acceptable than the pain suffered by a stag with a broken antler which subsequently suffers again (according to the FAWC) when the antler is removed.

Practically, the most serious problem arises when yearling stags are shipped to slaughter. In New Zealand, spikes are removed and injury to antlers therefore prevented. In Britain MAFF sources have indicated that practices that present a risk of injury should be carried out when velvet antler is not present. Obviously this is impractical in some situations, e.g. 7-month quarantine requirements, and impractically restrictive in others, e.g. seasonal slaughter of stags for venison.

It is argued that these practical issues are independent of economic issues or financial returns from velvet sales.

2.4 Other Countries

Some time ago the state of California (USA) banned velvet antler harvesting. This was in response to a public outcry following a television documentary of the practise on a California-based deer ranch. Canadian law in effect is similar to New Zealand legislation and allows velvet harvesting.

In China and some other Asian countries velvet antler is removed without analgesia, while the stag is physically restrained in a shute structure.

In Australia, there is a "mixture of attitudes" (A W English, pers. comm.). In most states it is an act of veterinary surgery, requiring that it must be done by a veterinarian. However, farmers may remove antlers from their own deer (but not those of others). Veterinarians may prescribe drugs necessary for this purpose.

However, in New South Wales, the Veterinary Surgeons' Board have ruled that xylazine and xylocaine should not be prescribed for use by deer farmers, thereby requiring that all velvet antler harvesting must be performed by a veterinarian.

3. NEW ZEALAND LEGAL REQUIREMENTS

3.1 Animal Protection Act 1960

3.1.1 Interpretation of the Act - two definitions of the Act are relevant

"Animal - any vertebrate animal that is kept in a state of captivity or is dependent upon man for its care and sustenance".

"Cruelty - wilful infliction upon the animal of pain or suffering in that its kind or degree or in its object or in the circumstances in which it is inflicted is unreasonable or unnecessary ...".

3.1.2 Relevant clauses of the Act

Clause 3, offences of cruelty, states:

"Every person commits an offence and shall be liable on a summary conviction to imprisonment for a term not exceeding 3 months or a fine not exceeding \$1000 or both who ...

- bb. Being the owner or person in charge of any animal without reasonable excuse neglects the animal so that it suffers unreasonable or unnecessary pain, suffering or distress ...
- f. Slaughters, brands, mutilates, confines, conveys or carries the animal in such a manner or position as to cause the animal unnecessary pain or suffering ...
- y. De-horns or causes or procures to be de-horned any animal over the age of 20 months unless during the whole course of the operation the animal is under the influence of general or local anaesthetic of sufficient power to prevent its feeling pain".

Clause 16 determines that the Court has power to disqualify any person convicted of cruelty to animals from having custody of any animal.

3.1.3 Implications of the Animal Protection Act

To the author's knowledge, no prosecutions relating to removal of velvet antler have been made in New Zealand, therefore none of the clauses in the Animal Protection Act have been tested in court. Therefore their interpretation and implications are speculative.

"Pain" and "suffering" are terms which obviously are not easy to define. Anecdotal evidence is often used to support the idea that pain can be recognised by animals and should be prevented by the use of anaesthetic and relieved with analgesics (Moreton and Griffiths, 1985). Even in humans pain is difficult to quantify and physical factors are complicated by psychological factors. Analgesia is not, however, refused to human patients purely because quantification is unreliable and subjective.

However, there are many similarities between humans and animals in anatomical and chemical pathways of pain perception. Therefore conditions which are painful in humans should be assumed to be painful in animals until behavioural or clinical science prove otherwise (Moreton and Griffiths, 1985). Pain, suffering and distress are subjective phenomena but with the present state of knowledge it is often possible to recognise these states.

In Britain the Home Office has stated it will continue to interpret pain in its "broadest possible sense". This is likely to be the situation in New Zealand law courts.

In the absence of scientific or objective criteria, anthropomorphic judgements may be the most valid, with the general principle being that if there is a doubt the animal should be given the benefit of that doubt. Interpreted literally this means that if you would consider that the procedure if performed on a human would be painful, then it should be regarded as being painful to the animal.

An even more complex situation is the duration of pain (Moreton and Griffiths, 1985). Relating to velvet harvest most would consider that with the use of chemical or physical restraint and local anaesthesia the velvet harvesting can be performed without pain, i.e. the animal shows no outward behavioural response to the sawing of the antler. However, local anaesthetics have only a short persistence as those who

have had minor surgery under local anaesthesia would no doubt testify. Thus while the surgical process may not be painful, the recovery phase might.

Suffering and distress, like pain, are difficult to quantify but are easily recognised not only by behavioural changes; many biochemical and endocrine changes can also be monitored. Signs of suffering and distress include changes in posture, vocalisation, temperament, locomotion, and a range of other features such as writhing, frequent urination etc. in a variety of animals. Changes in cardiovascular, respiratory, digestive, nervous and musculoskeletal, and some other medical signs, can be associated with pain and distress. It could be argued that yarding or placement into a restraining device, e.g. crush, may be a very stressful procedure, and therefore result in suffering by the animal. Furthermore, habituation may reduce the stress associated with these practices; i.e. the more often the deer is yarded and put through the crush the less stressful it is likely to appear.

The term "unnecessary" in the Animal Protection Act could be contentious - the FAWC argued that removal of antlers was unnecessary and that it could not be done without pain. Is the situation different in New Zealand?

Further, the FAWC referred to velvetting as mutilation. Under Clause 3(f) of the Animals Protection Act this may also be an argument which could be used here against velvet harvesting. Unfortunately the term "mutilate" has emotional connotations despite the simple dictionary definition as "removal of a limb or organ".

"De-horning" is referred to in the Animal Protection Act. It would be easy for a physiologist or anatomist to argue that antlers were not horns and therefore were not covered by Clause 3(y) of the Animal Protection Act. However, many years ago the MAF conveyed to the profession a legal opinion that velvet harvesting would constitute de-horning under the intent of the Animal Protection Act.

Strict interpretation of the twenty month age restriction in Clause 3(y) may lead deer farmers to believe that they can remove spiker velvet without analgesia. However, it is the policy of the Deer Branch NZVA (AGM 1985) that "...the removal of velvet antler from stags of all ages should be done under the influence of analgesia sufficient to prevent pain". This policy has been endorsed by the Deer Farmers' Association policy which states that "...velvet antler should only be removed under proper analgesic procedures". This view is supported by clauses (b) and (f) of the Act which prohibit unnecessary suffering or mutilation, regardless of age.

The MAFQual National Manager of Animal Welfare has implemented procedures to incorporate a clause along the lines of: "...No deer velvet is to be removed unless during the whole course of the operation the animal is under the influence of a general or local anaesthetic of sufficient power to prevent it feeling pain" in the forthcoming review of our Animal Protection legislation (A McKinnon, pers. comm.). No doubt this will shortly be debated in farming and veterinary circles.

3.2 Animal Remedies Act 1967

Section II Clause 22 allows the Animal Remedies Board to place any condition whatsoever on the supply and use of any remedy licensed by the Board. Such conditions appear on the packaging of the drug concerned. The most common phrase used is "to be used only by or under the supervision of a veterinary surgeon".

Interpretation

This Clause has been tested in law in New Zealand and the guiding principles are those provided by the Royal College of Veterinary Surgeons, summarised by Trim (1984). The veterinarian may prescribe a drug for use by the farmer provided ...

- "a. The veterinary surgeon is given responsibility for the health of the animal or herd in question by the agent or owners.

- b. The care of the animal or herd by the veterinary surgeon should be real and not merely nominal: and although circumstances will vary enormously, the veterinary surgeon must at least: i. either have seen the animal or herd for the purpose of diagnosis or prescription and immediately prior thereto; or ii. have visited the farm or other premises on which the animal or herd is kept sufficiently often and recently enough to have acquired from personal knowledge and inspection an accurate picture of the current health state on that farm sufficient to enable him to diagnose or prescribe for the animal or herd in question".

3.3 Other legislation

The Medicines Act, Poisons Act and the Misuse of Drugs Act all cover some of the drugs which are used from time to time for velvet harvesting. The most commonly used drug from this category is fentanyl; e.g. the Misuse of Drugs Act 1975 Clause 8 Section E indicates that a veterinarian may prescribe or administer controlled drugs under the various Schedules of that Act; (fentanyl appears in Schedule 2). These drugs can be used "... on animals under the care of a veterinary surgeon". The interpretation given in section 3.2 above applies to this clause.

It appears, therefore, that the farmer has the right to possess certain narcotic drugs for use on specified animals. However, it becomes illegal for a farmer to use drugs on animals other than those specified, e.g. those belonging to next-door neighbours.

3.4 Local anaesthetics

Local anaesthetics which are licenced animal remedies are to be used in accordance with the Animal Remedies Act 1967.

4. VELVET HARVESTING

4.1 Is it surgery?

In medical and lay dictionaries the definition of the word 'surgery' incorporates the treatment of injuries, deformities or disease by manual operative procedures. No medical or other source appears to include procedures such as antler removal that are performed for reasons other than injury, deformity or disease. However, the modern or common usage of the term 'surgery' would include velvet harvesting, along with de-horning, castration, de-tailing etc. Velvet antler is a live, vascular and innervated tissue.

4.2 Techniques

There are a range of techniques employed and each veterinarian has preferences. These may vary from farm to farm dependent on the temperament and nature of the deer, the abilities of the farmer and the facilities.

4.2.1 Restraint

(a) Chemical - the most commonly used drug is xylazine and this is available as "Rompun" which is licensed for use in deer, or "Thiazine" and "Xylaze" which are not licensed for use in deer. Xylazine is used either as a 2, 5 or 10% solution, or the dry substance is mixed to the veterinarian's requirement.

The injection of Xylazine should be in the anterior half of the neck as directed by the Animal Remedies Board for all injections to meat producing animals. However, this is not always practical, particularly when there is a risk of injury to the veterinarian when approaching the neck region. Some veterinarians mention that the drug is absorbed more rapidly when injected into the rump. This has not been the case in other species studied at Massey University. Remember - the injection should be intramuscular and therefore when stags have a considerable fat cover a long needle may be necessary.

Many veterinarians prefer a mixture of "Rompun" and "Fentaz", and this usually incorporates approximately 1 ml of "Fentaz" in a 25 ml vial of 2% "Rompun" or 1 ml Fentaz and 4 ml diluent in a 500 mg bottle of Rompun powder, resulting in a 10% Rompun solution. The reported advantages of this mixture are a more rapid and reliable response and greater analgesia attributable to Fentanyl.

Each of the above drugs or mixtures may be given at a dose rate to produce the desired response, e.g. sedation without recumbency through to total recumbency and immobility.

(b) Physical restraint - a range of hydraulic, pneumatic and mechanically operated crushes are used for physical restraint.

4.2.2 Analgesia

(a) Nerve block - Adams (1979) described the innervation and vascular supply to the antler. Diagrams are reproduced here courtesy of the Editor, New Zealand Veterinary Journal.

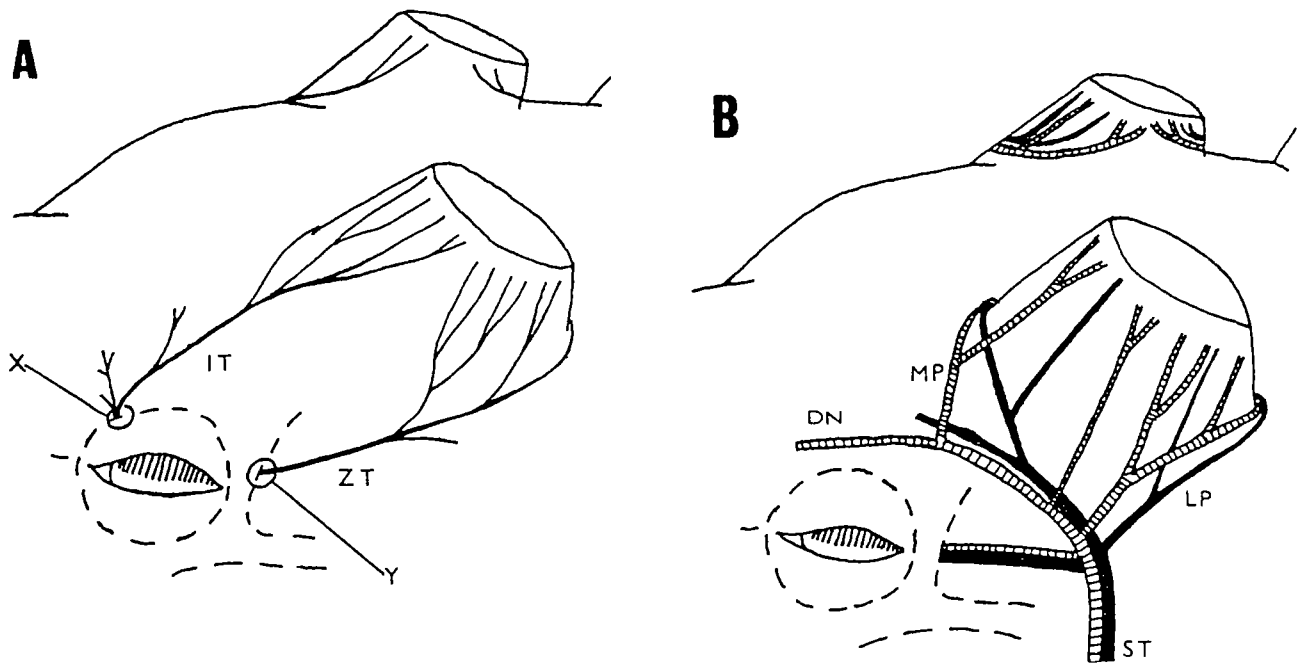


Figure. Red Deer — Antler Pedicle

Innervation (A):

IT — infratrochlear nerve

ZT — zygomaticotemporal nerve

X, Y — suggested sites for blocking conduction in these nerves

Dotted lines — orbital rim, supraorbital process and zygomatic arch

Blood supply (B):

ST — Superficial temporal artery/vein

LP — Artery/vein to lateral aspect of pedicle

MP — Artery/vein to medial aspect of pedicle

DN — Dorsal nasal artery

(Arteries — crosshatched, veins — black)

The zygomaticotemporal nerve is anatomically similar to the cornual nerve of cattle. The infratrochlear nerve may be blocked immediately above the medial canthus of the eye, or further dorsal on the frontal bone midway between the orbit and pedicle

- (b) Ring block - this is placed around the base of the pedicle.

While many veterinarians find the individual nerve blocks satisfactory a ring block may have an advantage of a more rapid diffusion to the smaller branches rather than the larger major nerves, and also will block the cutaneous cervical innervation which is present to a varying degree along the posterior border of the pedicle. Further, the use of a ring block is probably easier to teach to lay people and is therefore probably a more reliable technique. The disadvantage is that a greater volume of anesthetic may be required.

4.2.3 Tourniquet

It is usual for a tourniquet to be applied prior to antler removal. The tourniquet is usually placed below the antler-pedicle junction. The author prefers a figure-of-eight tourniquet.

A number of materials including baling twine, car inner-tubes, elastic bandage, rubber bands, and plastic or rubber tubing have been used for tourniquets. A veterinarian should choose a material in keeping with professional standards for surgical purposes.

4.2.4 Surgical removal

This operation usually is performed with either a surgical saw, tenon saw or meat saw. The incision is made approximately 10 mm distal to the antler-pedicle junction. Some veterinarians prefer to incise the cutaneous tissues around the antler at the incision line in order to prevent skin tearing in the event that the stag retracts suddenly, particularly when cutting through the last piece of skin. Tearing a flap of skin will downgrade the product.

4.2.5 Post-operative procedures

- (a) A variety of powders have been used but their justification is questionable. Some veterinarians attempt to stem the capillary flow or venous drainage from the matrix of the antler by application of a sterile gauze swab. These must be removed after haemostasis. For the majority of cases nothing is applied to the pedicle stump after antler removal.

The tourniquet must be removed before the stag is released from the yard. Failure to do this may result in permanent injury to the antler pedicle and prevent normal antler growth in future. The time taken for haemostasis varies considerably, and can be prolonged in stags with large antlers and therefore large vascular supply.

Recumbent stags are usually given yohimbine hydrochloride ("Recervyl" or "Reversine") to enable them to regain mobility and to avoid most of the risks of recumbency under neuroleptanalgesia. If "Fentaz" is used either Lethidrone or Naloxone are used as the antidote.

4.2.6 Stag deaths

Walker and Middleberg (1988) reported deaths of stags following velvet harvesting. These authors advise a procedure for veterinarians to follow to instruct farmers on observation of stags post-velvetting and to report immediately to the veterinarian if untoward sequelae are observed. The pharmacological, physiological and pathological factors associated with stag deaths are discussed elsewhere in this Proceedings (Mackintosh *et al*).

4.2.7 Handling of velvet

It must be remembered that velvet antler is a human edible product and therefore should be handled in hygienic fashion. It should be cooled rapidly in a fly-proof environment and then placed in clean plastic bags and deep frozen ready for sale at the farm gate.

4.2.8 Removal without analgesia

There is considerable anecdotal evidence which suggests that velvet antler removal without analgesia is not an uncommon practice. This is clearly illegal but no prosecutions have yet been brought, largely because substantive evidence is difficult to obtain.

4.3 The velvetting debate

4.3.1 Drug supply

For more than a decade the Deer Farmers' Association has lobbied for free access to the drugs used for velvet harvesting. Moves have even included an attempt to persuade the Animal Remedies Board to alter the conditions of sale for "Rompun". The predominant reasons given for allowing farmers to have drug supplies include:

- cost - particularly for farmers distant from veterinary surgeries;
- availability of service at the precise time for optimum velvet harvesting, e.g. weekends;
- many farmers believe they are more experienced at velvet removal than veterinarians are;
- farmers have argued that strangers have an unsettling influence on the animal and therefore velvet antler damage is increased when a veterinarian is present;
- restrictive practice - some farmers believe that veterinarians are attempting to retain the sole right to prescribe drugs for self-protective financial reasons.

The veterinary profession's response has been that costs should not override welfare considerations (this philosophy is supported by the FAWC report 1980), and that it is not the veterinary profession's obligation to ensure that a farmer's enterprise is economic. Most veterinarians are very experienced at velvet harvesting and deer handling, and are not convinced of the comments on unsettling stags. Farmers should be able to plan well in advance to ensure that veterinary services are available as and when required by consultation and negotiation with their practitioner. Restricting the sale of certain animal remedies is not a restrictive practice as it has wider ramifications for a range of drugs and a range of uses. The use of dangerous drugs must be consistent between species and drug-type. The animal must be protected against misuse of drugs.

The Animal Remedies Act and drug container label instructions, and legal interpretations allow the veterinarian to prescribe drugs for the purpose of velvetting provided the animals are under the care or supervision of that veterinarian. Approximately 20% of veterinarians prescribe the drugs for the purposes of velvet harvesting. This act must be by mutual agreement between the prescribing veterinarian and the farmer, and must be undertaken after consideration of a range of issues involved.

In 1985 the New Zealand Veterinary Association surveyed members for their opinions and actions relating to the supply of "Rompun" for velvet harvesting. The results of that survey were never made public for fear that they may be misconstrued and misused to the unfair disadvantage of the profession.

4.3.2 Training courses for farmers

The Deer Farmers' Association has on several occasions requested the veterinary profession to consider the establishment of formal course-based training of farmers for velvet antler removal. This has been resisted by the veterinary profession, largely because the decision to prescribe drugs would continue to remain that of the individual veterinarian. Certification qualification of farmers would not alter this fact.

There are numerous inherent difficulties in conducting a course - its cost-benefit for the individual farmer is usually questionable, and discreet surveys of deer farmers have shown such courses probably would not achieve significant support.

5. OTHER ISSUES

In Europe animal welfare and rights groups are achieving considerable prominence beyond the individual issues under scrutiny. There have been examples where trade sanctions for a variety of unrelated products have been threatened against countries in which animal welfare is not to the standard required of an importing country. This may appear to many to be irrational but the ramifications could be that if velvet harvesting in New Zealand is seen by European consumers as an unnecessary violation of animal welfare, they could potentially mount campaigns against New Zealand venison or other products.

There is a dichotomy between philosophical and emotive approaches to animal products. Questions have been raised about the pharmacological effectiveness of velvet antler. Compare this with the current controversy over growth promotants or bovine somatotrophin where there is no scientific evidence of harm to the consumer, but because of perceived intervention use of growth promotants in cattle in the EEC have been banned, and there is a prohibition on imports of animals which have been administered growth promotants. Thus, the scientific rationale may bear little weight amongst consumers particularly in the lucrative European markets for venison.

6. CONCLUSIONS

Velvet harvest could well come under increasing scrutiny by animal welfare and rights movements not only in New Zealand but internationally.

The debate is likely to be emotive and based on perceived issues such as mutilation and cruelty which are difficult to quantify, and in many cases a matter of individual opinion.

Working from the premise that velvet harvesting is an accepted and acceptable form of farming in New Zealand, the deer farmers would be wise to ensure that no undue attention is attracted to their industry as a result of failure to comply with the Animal Protection Act.

The veterinary profession may be in the most difficult position should a debate about velvet harvesting arise in this country. This is based on the following observations and questions:

- The British Veterinary Association supported the prohibition of velvet removal;
- The New Zealand Veterinary Association currently has no official policy supporting or opposing velvet harvest. The passive approach of having no policy yet the full and active involvement by veterinarians in this procedure must be taken as an act of endorsement.
- To my knowledge the UK is the only country which has specifically investigated velvet harvesting and its welfare and philosophical aspects. Is velvet harvesting permitted in New Zealand and other countries simply because of passive acceptance, or because it is actively considered a proper and acceptable procedure and farming system? Would an investigation in New Zealand equivalent to the FAWC investigation yield a response that concurred with that in Britain?
- Veterinary thinking in New Zealand is therefore at variance with veterinary thinking in Britain. Britain is a country in which animal welfare and rights achieve considerable publicity, and where governments seem prepared to legislate readily on animal welfare issues.

At present if the deer industry wishes to avoid animal welfare criticism the most appropriate way may be to support the endeavours of the veterinary profession to ensure direct personal supervision of velvet harvesting wherever and whenever it is performed. The veterinarian in that instance provides a trained, independent and non-emotive advocate for the welfare of the individual deer. The drug supply issue which has haunted the profession for a decade would then recede into insignificance as the real issue facing the velvet industry is addressed.

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