

Velvet Removal – Science and Regulatory Overview

Legal Framework

In New Zealand, velvet antler removal (velvetting) is a legally controlled surgical procedure designed to assure the welfare of the stags being velvetted.

The procedure is covered by legislation under the “*Animal Welfare Act 1999*” (which replaced the “*Animals Protection Act 1960*”) and the “*Code of Recommendations and Minimum Standards for the Welfare of Deer During the Removal of Antlers 1992*”.

Under the Animal Welfare Act 1999, velvetting is classified as a *controlled surgical procedure* which may only be performed by a veterinarian, veterinary student or by a person with veterinary approval to undertake the procedure.

Under the Code of Recommendations and Minimum Standards for the Welfare of Deer During the Removal of Antlers 1992, the removal of antlers in velvet must take place under veterinary supervision, for two main reasons:

1. To ensure that the welfare of animals is protected by compliance with the Act and the Code.
2. To ensure that restricted drugs (used for sedation and analgesia) are administered according to law.

Compliance With The Legal Framework

The New Zealand deer industry operates an industry quality assurance scheme for velvetting (“*National Velvetting Standards Body*” or NVSB). The scheme allows for a farmer to remove velvet under the supervision of a qualified veterinarian. Under the scheme the farmer must complete theory and practical examinations before being permitted to remove velvet. Thereafter the farmer must receive regular supervision and independent audit to maintain the legal ability to remove velvet.

Should a farmer not wish to be part of the NVSB the alternative is to employ a veterinarian to undertake all velvetting.

Through the individually numbered tagging system, there is the ability to check all sticks of velvet presented for sale. At the completion of each season the NVSB and NZ’s Ministry for Primary Industries (Enforcement Directorate) work together to review compliance. Any potential breach leads to further investigation and potential prosecution, if required.

SCIENTIFIC RESEARCH ON VELVET REMOVAL

As a relatively young livestock industry (begun in the 1970s), the New Zealand deer industry has faced unique challenges to animal health and welfare aspects of pastorally farming deer. As a result there has been significant investment in scientific research in farming of deer in New Zealand and velvet removal has been extensively studied and evaluated. The first description of antler removal procedures in veterinary literature was in 1979,

and the formation of compliance standards for the NVSB were published in 1993.

A few key publications are listed and summarised below to illustrate the evolution of velvet removal practices and the wide ranging research associated with velvet removal.

The effect of antler removal on dominance and fighting behaviour in farmed red deer (Suttie JM. *Journal of Zoology* 190: 217-224, 1980). The results from this study demonstrated that the removal of antlers did not affect dominance relations (dominance hierarchy) between stags that had antlers removed, i.e. hierarchy was maintained. However competition with antlered rivals would be severely compromised due to loss of defensive binding functions of the antlers.

Post-velveting stress in free-ranging red deer (Matthews LR, Carragher JF and Ingram JR. *Proceedings of a Deer Course for Veterinarians, Deer Branch NZVA Course No. 11*; 138-146, 1994). Velveted animals have similar levels of some physiological stress parameters to control animals (same handling but no velvet removal) and resume normal activities soon after return to the paddock.

Chemical analgesia for velvet antler removal in deer (Walsh VP, Wilson PR. *New Zealand Veterinary Journal* 50(6), 237-243, 2002): Discusses a range of potential chemical anaesthetics and their effective analgesia, safety and side effects. The use of a local anaesthetic, lignocaine hydrochloride 2% administered as ring block is considered to be effective.

Welfare of farmed deer in New Zealand. 2. Velvet antler removal (Wilson PR, Stafford KJ. *New Zealand Veterinary Journal* 50(6), 221-227, 2002): Reviews published data on welfare aspects of stag restraint and antler removal. In addition to local anaesthetic, the use of low compression rubber rings is acknowledged as showing no behavioural response, but the authors question the degree of (ischaemic) pain that the rings themselves may cause.

Behaviour of red deer following antler removal with two methods of analgesia (Webster JR, Matthews LR. *Livestock Science* 100, 150–158, 2006): Compares low compression rubber rings with lignocaine hydrochloride 2%. Behavioural indications of pain or irritation increased following antler removal with analgesia and had mostly disappeared by seven hours. Overall behavioural differences between animals receiving either compression or lignocaine analgesia provide little evidence for a difference in post-surgical welfare between these two methods.

Studies on the efficacy of NaturO™ rings for provision of analgesia at the time of velvet antler removal in one-year-old red deer (Flint P, Wilson PR, Johnson CB. *Client Report for Velvet Antler Research New Zealand*, 2007): Low compression rubber ring reduces or eliminates detectable responses suggestive of noxious sensation using behavioural or EEG assessments. There is no statistically significant difference between rings and lignocaine.

Report to VARNZ on NaturO rings for the velveting of yearling stags: Work done in the 2006-2007 Velveting Season (Nicol A. *Client Report for Velvet Antler Research New Zealand*, 2007): The level of analgesia achieved

by low compression rubber rings was statistically indistinguishable from that achieved by lignocaine as judged by the behavioural response to nerve stimulation of the antler and by the 'nick' test although the time taken to achieve analgesia was markedly longer (24 minutes) for rings than from lignocaine (3.5 minutes).

Studies on the potential noxiousness of NaturO™ rings of one-year-old stags during application (Flint P, Wilson PR, Johnson CB. *Client Report for Velvet Antler Research New Zealand*, 2008): Overall it appears that the NaturO™ Ring is a relatively mild insult that some animals can tolerate without obvious effects, while a few sense the application of the ring and demonstrate aversion-like behaviour. In the interim the researchers' conclusions are that the behaviours seen in response to rings are due to the pressure of the rings. The noxious effect of the ring is not sufficient to alter the frequency of other normal behaviours.

Report, VARNZ NaturO™ Ring Study 2008: The heart rate response of yearling stags to a range of stimuli and associated studies (Nicol AM, Barrell GK, Gibbs JG and Ridgway MJ. *Client Report for Velvet Antler Research New Zealand*, 2008): Very little change in heart rate pre- and post-application of rubber rings and almost identical to no intervention and no significant difference in the heart rate of stags before, during or after use of rings or lignocaine. Use of NaturO™ Rings can not be classed as noxious and any pain or discomfort is negligible.

An ethical analysis of velvet antler removal from spiker stags using NaturO™ rings: A Report for Velvet Antler Research New Zealand & Deer Industry New Zealand (Fisher MW. *Client Report for Velvet Antler Research New Zealand*, 2008): Used a bioethical framework modified from that used for assessing animals for experiments. The impact on the deer's mental experience was rated as moderate and the impact of velvet antler removal using rings was comparable to other deer husbandry procedures such as ear tagging and weaning. Under the bioethical framework, velvet antler removal using rings was deemed a suitable animal husbandry procedure.

FURTHER INFORMATION

- <http://www.biosecurity.govt.nz/regs/animal-welfare>: Provides overview of animal welfare regulations and structures and links to the Animal Welfare Act 1999 and associated Codes of Welfare/
- *Farmer Velvet Antler Removal Manual*, NVSB, 2005: Outlines legal responsibilities and techniques for velvet antler removal.
- *Proceedings of a Deer Course for Veterinarians*, Deer Branch of the NZ Veterinary Association: Annual conference proceedings containing a range of papers on antler removal since 1984.

- <http://deernz.co.nz>: Deer Industry New Zealand website providing further contacts for NVSB, Science and Quality Assurance.