



May (Autumn) 2013, 2 pages

## PAINLESS VELVET REMOVAL

By Andy Cowan

A recent article on the New Zealand website “fwplus.co.nz” (1) may help to reinforce what Dr. Joubert has said – “A complete ring block with overlapping blebs appears to provide the most effective analgesia.” This website incorporates information from all aspects of New Zealand farming, including deer farming. This story can be found in a sub-section called “Country Wide”.

In 2008 a paper was presented at the International Animal Welfare Conference outlining a study made on pain recognition techniques in animals (2). One of the authors was a veterinarian called Dr. Pania Flint. Dr Flint has spent six years at Massey University where she has been studying the pain effects of different deer velvetting procedures for her PhD.

The idea of studying deer originated in her undergraduate years at Massey. After graduating she went into private practice for a year and then returned to Massey as a research technician and was studying various methods of applying a ring block local anaesthetic. This research project then developed into a PhD which ended up having four major parts, all to do with velvet removal.

The first part involved videoing farmers applying the lignocaine ring block to the antlers of over 450 stags and analysing any pain response. While there were quite a number of compounding factors, there was evidence that the stag was in pain when a gap was left in the ring blocker or when the blebs did not overlap.

Secondly, Dr. Flint investigated the NaturO ring - a compression band used for removing spiker velvet. The aim was to see if the analgesia from compressing the nerves was enough to prevent pain and to try to determine the level of pain inflicted by applying the ring. She found that young deer were too unpredictable and flighty to use the videoing technique. She then used electroencephalography (EEG) monitoring of brain activity under general analgesia to see if the brain was registering pain. In his discussion, Craig Johnson (3) pointed out that, in human trials, there is a strong correlation between EEG variables and the subjective evaluation of pain. Based on these findings, he believes that EEG analysis can be used as an indicator of the degree of pain but not necessarily the size of the wound inflicted on the animal. The second study involved two groups totalling over 50 deer. It concluded that, although the NaturO ring does provide analgesia, it is not as effective in blocking pain as is lignocaine. The NaturO rings are still allowed to be used on spikers.

The third part of Dr. Flint's study looked at the issue of lignocaine residues in velvet antlers. A survey conducted in 2004/2005 by the New Zealand Food Safety Authority (NZSFA) found 50% of the antlers they surveyed exceeded the maximum limit of 0.1mg/kg (3) at the base of the antler. According to Flint this is an arbitrary figure but if the velvet growers do not comply with this standard the industry may be placed on a Residue Control Scheme which would be costly to the industry. The answer to this problem is simply to apply the tourniquet tightly. Done properly, lignocaine residues in the antler will always be less than 0.1mg/kg (4).

One of the perceived problems with the use of lignocaine (lignocaine hydrochloride) is that, when it breaks down, it produces a potentially carcinogenic product (4). In theory, this could be a risk to humans and this is why the NZFSA set the maximum permissible level of lignocaine in the deer antler. Alternatives which do not produce carcinogenic bi-products, such as Articaine, have been trialed successfully but unfortunately are not registered for animal use.

It has been of concern to veterinarians for many years that maybe 1 in 1000 stags which are sedated with xylazine die within 24 hours of sedation. In New Zealand some velvetting operations may sedate 50% of their stags. This sedation is always accompanied by the lignocaine injections. However, it is still a lot quicker than simply using a local anaesthetic, particularly when dealing with large numbers of stags. Dr Flint has been

involved with researching the effects of xylazine on young deer. Her research found that xylazine had two effects. The first effect of xylazine is on the oxygen exchange capacity of the blood- less oxygen is carried on the haemoglobin. Secondly, the post-mortem lungs were filled with fluid which caused the stag to die. There is still much more work to be done on this topic as it is believed that even stress in the yards may be a contributing factor.(5)

### References:

1. Harrigan. Jackie. The Pain Game. Country Wide. March 2013.
2. Johnson. CB; Gibson. TJ; Flint. P; Wilson. PW; Mellor. DJ. (2008). New techniques for pain recognition: What are the applications where are the limits. AAWS08 International Animal Welfare Conference.
3. Johnson. CB. New Approaches to Identifying and Measuring Pain. Australian Animal Welfare Strategy Science Summit on Pain and Pain Management. May 2007 – Proceedings
4. Flint. P; Johnson. CB; Wilson. PR; Murrell. J; Hartman. A. Lignocaine residues in velvet antler1: Determining tourniquet tension and antler blood flow using fluorescent microspheres and fluoroscopy. Deer Branch NZVA – Deer course for Veterinarians #23. 2006.
5. Flint. P; Wilson. PR; Johnson. CB. Post-xylazine stag deaths – Update 2006. Deer Branch NZVA – Deer course for Veterinarians #23. 2006.

### EDITORS NOTE

*I have recently spoken to a doctor and a dentist. The dentist uses Articaine for local anesthetics and the doctor, when cutting a small piece of skin from your back in order to perform a biopsy, will probably use 3ml of lignocaine. I wonder why the NZFSA only allow 0.1mg/kg (1gm/10 tonnes) in velvet, when it would appear that it is acceptable to inject 3gm/80kg into humans.*