

## Post-Castration and Tail Docking Pain Alleviation in Lambs

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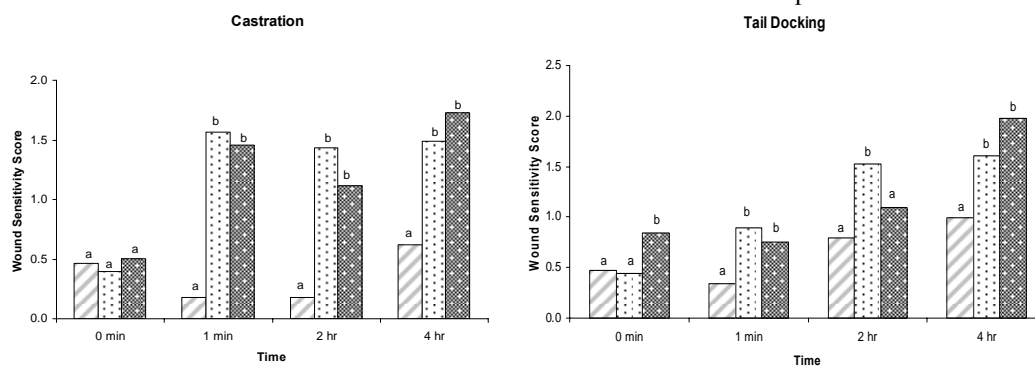
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Tail-docking and castration are common husbandry procedures performed routinely on fully conscious animals without the use of analgesia (Jongman *et al* 2000). The painful nature of these procedures has attracted a considerable amount of public attention which could lead to both domestic and international consumers choosing alternative products and markets which appear more welfare conscious (Grant 2004). This project aimed to explore industry and consumer acceptable methods of pain management for castration and tail docking of lambs.

In total 57 lambs were randomly allocated to one of three treatment groups for wound sensitivity testing; Tri-Solfen<sup>®</sup>, placebo (the viscous gel of Tri-Solfen<sup>®</sup> without active constituents) or untreated (lambs castrated and tail docked without any treatment). All lambs were both castrated and tail docked in the same process. Lambs were surgically castrated using a marking knife. 24 lambs were tail docked using a hot-iron knife with the remaining 33 lambs tail docked surgically using a marking knife. Pain was assessed through wound sensitivity testing using Von-Frey (VF) hairs and a numerical rating scale (NRS) measuring both local and central motor responses. Lamb responses such as kicking, vocalisation and movement were aligned to a NRS scale of 0 to 3 (0 being no response, and 1 to 3 being mild, moderate and severe responses respectively) and recorded for each prick with the VF hair. Wound sensitivity testing was conducted immediately prior to castration and tail docking and at 1 min, 2 hours and 4 hours post-castration and tail docking. At each of these time points a series of eleven pin pricks (4 scrotal wound edge, 2 scrotal peri-wound, 3 tail wound and 2 peri-tail wound) were conducted firstly with a 10g VF hair then with a 75g VF hair. These two weights were used to simulate a light and heavy touch sensation at the wound site. Data was examined using a REML (repeated measures) general linear mixed model analysis, separating data from the scrotal and tail wound testing. The results displayed in Figure 1 combine data from both the 10g and 75g VF hair.

Wound sensitivity testing showed a significant reduction in pain response between animals treated with Tri-Solfen<sup>®</sup> and those given a placebo or untreated for all measurement periods post-castration. At 1 min and 4 hours after tail docking Tri-Solfen<sup>®</sup> treatment resulted in a significant reduction in pain when compared to lambs treated with the placebo or receiving no treatment. At the two hour treatment time there was only a significant difference between lambs treated with Tri-Solfen<sup>®</sup> and those treated with the placebo.



**Figure 1 – Mean wound sensitivity scores for lambs treated with Tri-Solfen<sup>®</sup> □, the placebo formulation ▨ and remaining untreated ■ at each measurement time point for castration and tail docking. Different letters denote a significant difference (P<0.001) within each time point.**

We can conclude that Tri-Solfen<sup>®</sup> topical analgesic significantly reduced pain-related behaviour for a period of up to 4 hrs following castration and tail docking in lambs.

Jongman, E.C., Morris J.P., Barnett J.L. and Hemsworth, P.H. (2000) EEG changes in 4-week-old lambs in response to castration, tail docking and mulesing. *Aust. Vet. J.* **78**:339.

Grant, C. (2004) Behavioural responses of lambs to common painful husbandry procedures. *Appl. Anim. Behav. Sci.* **87**:255.

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