



**HOSPITAL VETERINÁRIO
MURALHA DE ÉVORA
6-7 MAR · 2020**

PRODUÇÃO ANIMAL – SUSTENTÁVEIS SOMOS NÓS!

Controlo da dor nas intervenções de rotina na produção de ruminantes.



George Stilwell

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Centre for Interdisciplinary Research in Animal Health,
Faculty of Veterinary Medicine, Lisbon University

06 Março 2020
Évora, Portugal

Sustentabilidade da produção animal:
energia, solos, químicos, água, gases efeito estufa, poluição, segurança,
antimicrobianos, Uma Só Saúde
VALORES ÉTICOS.



Livestock's Long Shadow: Environmental Issues and Options, FAO, 2006.
http://www.fao.org/docrep/010/a0701e/a0701e00.HTM_downloaded_10.10.18

CONSUMERS ARE THE FUEL FOR ANIMAL ABUSE

unreliable and
stressful
slaughtering

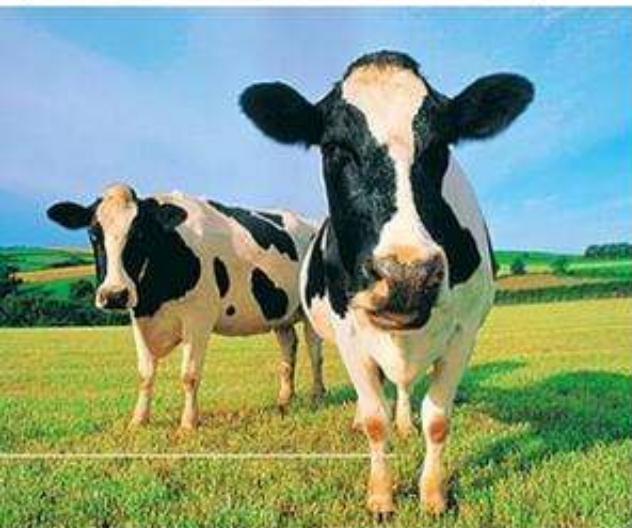


painful beak,
tail and skin
cutting

poor and stressful
living conditions



BUT THEY ARE ALSO THE FUEL FOR CHANGE



demand better!



don't take from any animal whose life you would not want to have lived

**MINISTÉRIO DA AGRICULTURA,
DO DESENVOLVIMENTO RURAL E DAS PESCAS**

Decreto-Lei n.º 64/2000

de 22 de Abril

CAPÍTULO II

Disposições especiais

Artigo 4.º

Obrigações do proprietário ou detentor

1 — O proprietário ou detentor dos animais deve tomar todas as medidas necessárias para assegurar o bem-estar dos animais ao seu cuidado e para garantir que não lhe sejam causadas dores, lesões ou sofrimentos desnecessários.

2 — O proprietário ou detentor de animais deve salvaguardar que os mesmos não causem quaisquer danos em pessoas ou noutros animais.



PROJECTO BovINE

DAR A CONHECER BOAS PRÁTICAS

- Investigação aplicada e inovação.
- Divulgação e formação.
- Conhecer bem o que a **Ciência e Tecnologia** pode trazer para a produção.
- GRUPOS DE TRABALHO
 - Resiliência económica
 - Saúde e bem-estar
 - Impacto ambiental (pegada carbono)
 - Genética
 - Divulgação
 - Criação de rede com todos os interessados



Intervenções dolorosas

- DESCORNA
 - VITELAS DE LEITE
 - VITELAS DE CARNE
 - BOVINOS ADULTOS
 - CABRITAS DE LEITE
- CASTRAÇÃO
- AMPUTAÇÃO DE CAUDA
- APARAGEM DE ÚNGULAS DE BOVINOS





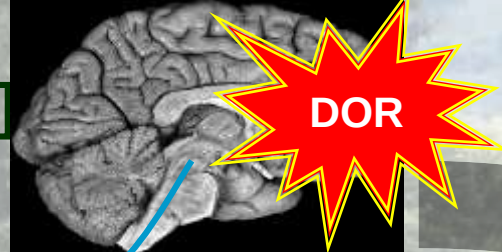
DOR

– Aguda

–**Crónica**

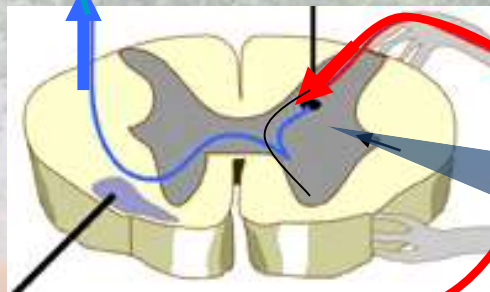
- Stress
- Medo
- Alteração do comportamento.
- Immunodepressão
- Menor produção

SISTEMA NERVOSO CENTRAL



RESPOSTA EMOCIONAL

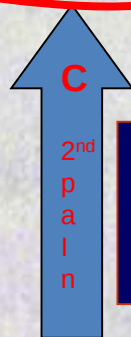
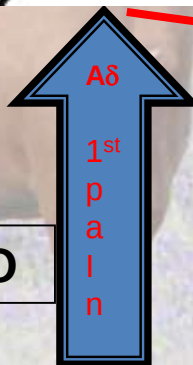
ESPINHAL MEDULA



MODULAÇÃO

$A\beta$

TRANSMISSÃO



FIBRAS NOCICEPTIVAS

- FIBRAS $A\delta$ = PRIMEIRA DOR
- FIBRAS C = DOR ARRASTADA, INSIDIOSA

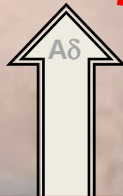
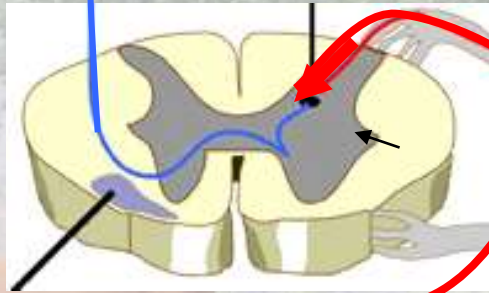
TRANSDUÇÃO
(nociceptores)



ESTÍMULO NOCIVO



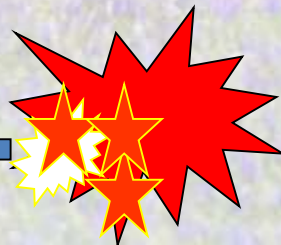
- DOR CRÔNICA
- HIPERALGESIA



**FIBRAS C
hiperreactivas**

FIBRAS SILENCIOSAS

INFLAMAÇÃO



Castração

- Porquê?
 - Altera características da carne
 - Reduz comportamento sexual
 - Reduz conflitos.
- Relativamente rara em Portugal.
- Causa dor aguda e crónica severa e prolongada.
- Métodos — vantagens e desvantagens
 - Anel — SÓ EM VITELOS
 - Cirurgia - SÓ POR MÉDICO-VETERINÁRIO
 - Burdizzo - esmagamento
- **Anestesia e analgesia reduz perdas e promove bem-estar.**



Dor continuada – analgésicos endógenos pouco eficazes.

Hiperalgesia periférica – tecido lesionado e tecido circundante mais sensível.

Hiperalgesia central – dor generalizada por hipersensibilidade central.



de Oliveira et al. BMC Veterinary Research 2014, 10:200
<http://www.biomedcentral.com/1746-6148/10/200>

BMC
Veterinary Research

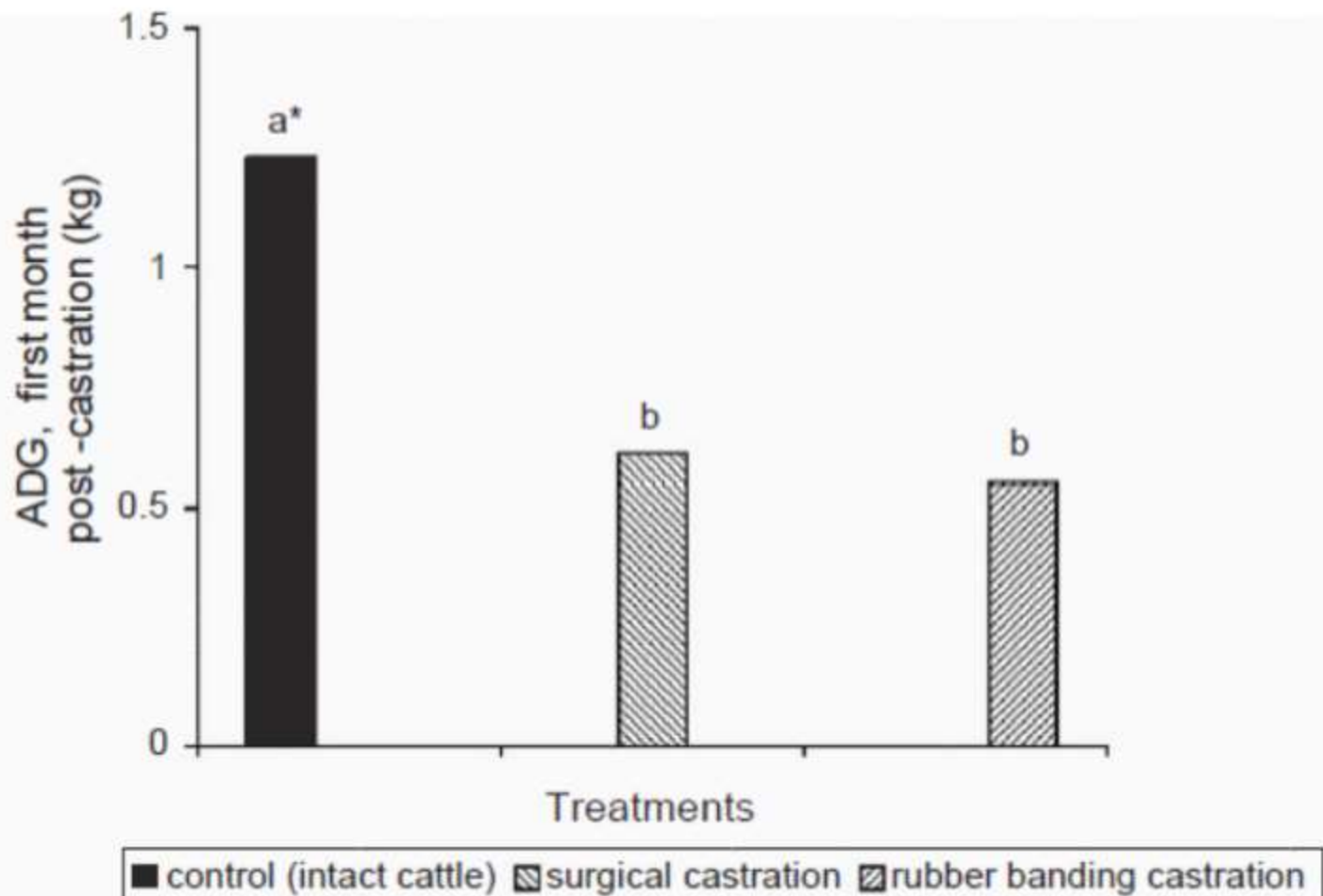
RESEARCH ARTICLE

Open Access

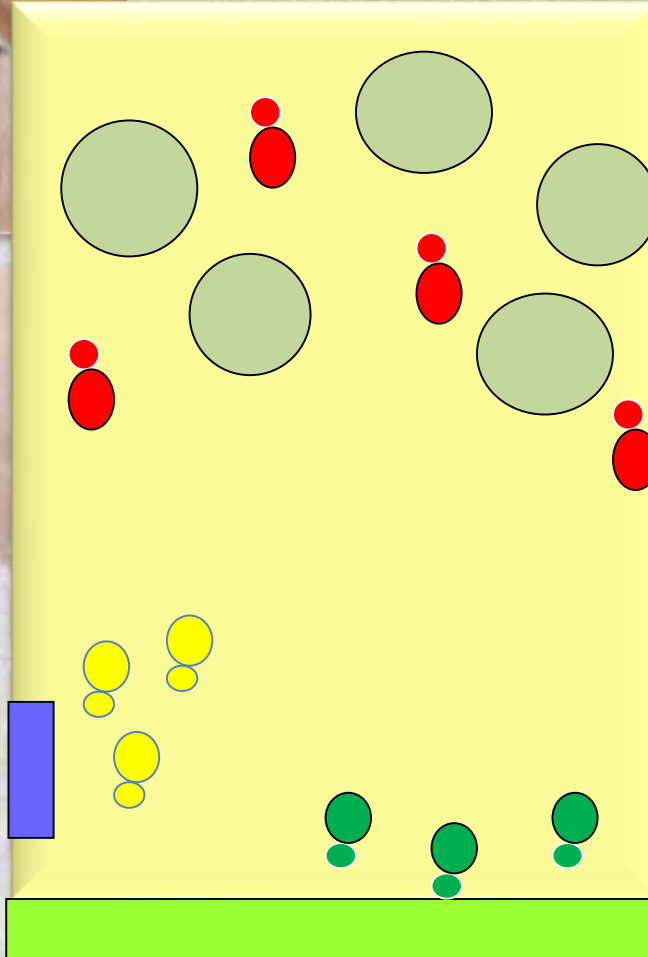
Validation of the UNESP-Botucatu unidimensional composite pain scale for assessing postoperative pain in cattle

Flávia Augusta de Oliveira^{1*}, Stelio Pacca Loureiro Luna^{2†}, Jackson Barros do Amaral³, Karoline Alves Rodrigues², Aline Cristina Sant'Anna⁴, Milena Daolio² and Juliana Tabarelli Brondani²

CASTRACÃO – REDUÇÃO GMD



CASTRAÇÃO – PERDA DE APETITE



Analgésico curta duração



Sem analgesia



Analgésico longa duração

Effects of nonsteroidal anti-inflammatory drugs on long-term pain in calves castrated by use of an external clamping technique following epidural anesthesia

George Stilwell, DVM, MS; Miguel S. Lima, DVM, PhD; Donald M. Brossen, DVM, PhD

Objective—To compare efficacy of flunixin meglumine versus carprofen in controlling pain under field conditions following castration by use of an external clamping technique in calves that received epidural anesthesia.

Animals—40 male 5- to 6-month-old calves.

Procedures—Calves were allocated to 4 groups: castrated only (control calves; n = 8); castrated 5 minutes after epidural injection of 2% lidocaine (epidural-alone treated calves; 8); castrated after epidural anesthesia and SC flunixin meglumine administration (epidural-flunixin treated calves; 12); and castrated after epidural anesthesia and SC carprofen administration (epidural-carprofen-treated calves; 11 [1 calf not included]). Plasma cortisol concentration was measured before and 6, 24, and 48 hours after castration. Time of arrival at the feed trough at 24 and 48 hours was observed. Calves were observed at 24 and 48 hours for 4 pain-related behaviors.

Results—At 6 hours, control calves had significantly higher plasma cortisol concentrations, compared with baseline values and those of epidural-flunixin- and epidural-carprofen-treated calves. At 24 hours, epidural-carprofen-treated calves had significantly lower plasma cortisol concentrations, compared with control calves. At 48 hours, epidural-carprofen-treated calves had plasma cortisol concentrations that were similar to baseline values and significantly lower than epidural-flunixin- and epidural-alone-treated calves. At 24 and 48 hours, epidural-carprofen-treated calves were first to arrive at the feed trough and had fewer pain-related behaviors.

Conclusions and Clinical Relevance—SC carprofen administration in combination with epidural injection of lidocaine may improve the welfare of calves castrated by use of an external clamping technique for up to 48 hours. (*J Am Vet Assoc* 2006;09:xxxx-xxxx)

Castration of cattle is performed to reduce aggressiveness and sexual activity and to modify carcass characteristics. Castration methods frequently used are those that involve surgical removal of the testicles, application of a constricting elastic band (rubber ring) at the base of the scrotum, and bloodless castration by use of external clamping with an appropriate device (i.e., via a castration clamp to crush the spermatic cord). All of these procedures are known to cause inflammation and pain.^{1,2} Castration by use of an external clamping technique produced the least severe responses of the methods tested. Some authors consider use of a castration clamp to cause only short-term pain in young calves.³

Castration by use of an external clamping technique is sometimes preferred because it is quick and bloodless, with therefore less likelihood of an infection. Nevertheless, it has some important disadvantages, which include severe inflammation, signs of distress and pain, leukogram changes, reduced appetite, and loss of body condition,^{4,5} and it is considered the method with the least certainty of success.⁶ Dangerous complications, which are possible when erroneous application of the castration clamp occurs, are necrosis and gangrene of the scrotum.⁷

Recommendations of the European Commission¹⁰ are that protocols to control pain (local anesthesia and analgesia) should be used when calves are castrated. Even where legislation is not specific, analgesia should be maintained for the period during which pain is confirmed or probable.

Some anesthesia and analgesia protocols have been studied for different castration methods.^{1-4,11} It is well documented that use of a castration clamp causes behavioral (e.g., changes in gait, posture during standing and lying, and feeding; foot stamping; restlessness; tail wagging; and scrotum flicking) and physiologic (e.g., changes in cortisol and acute-phase protein concentrations and immune function) pain-related changes for

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This study was performed at Real Vileiros, Monção 1705-101 Monção, Portugal.

The authors thank Real Vileiros, Prof. Lúcia Mateus, Maria E. Pereira for technical assistance.

Support by CITA, Faculdade Medicina Veterinária, UTL, Portugal. Address correspondence to Dr. Stilwell.



VICTORY

**3 States to
Implement
Painless Cattle
Castration**

DESCORNA: NECESSIDADE OU CAPRICHOS?



Martha d'Andrade



Martha d'Andrade

Razões de produção (maneio...)

REDUÇÃO (gravidade) DE LUTAS DE DOMINÂNCIA.

**MENOR ESPAÇO NECESSÁRIO PARA A
ALIMENTAÇÃO.**

**MAIOR SEGURANÇA NOS AGRUPAMENTOS
REDUÇÃO DE TRAUMATISMOS, ABORTOS...**

MENOS LESÕES GRAVES (ÚBERE...)

MAIOR SOSSEGO

MAIOR SEGURANÇA PARA OPERADORES.

TRAUMATISMOS NOUTROS ANIMAIS

maior preço na venda de reprodutores

maior preço nos vitelos para acabamento



Ricardo Romão



Ricardo Romão



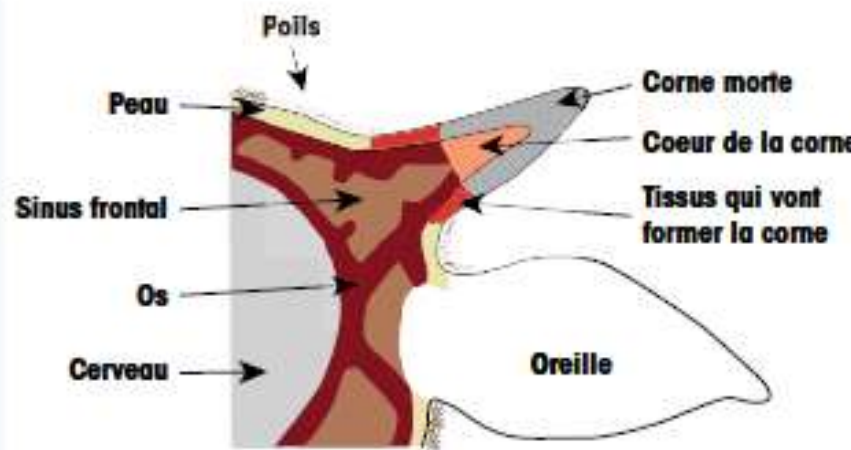
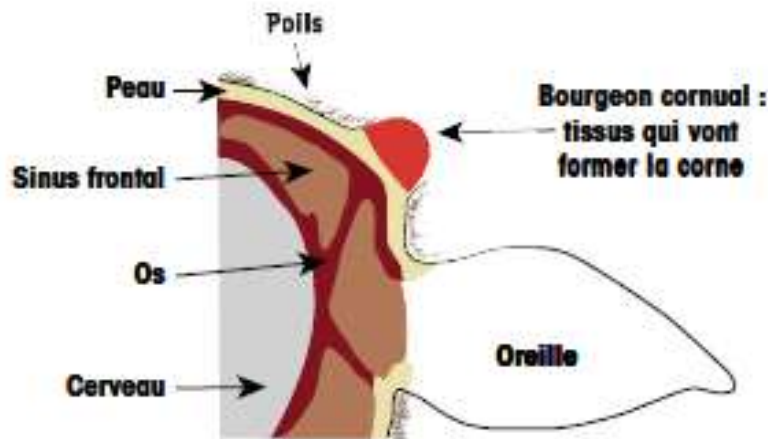
Ricardo Romão



Métodos

TODOS CAUSAM DOR!!!!





DESCORNA DE ANIMAIS ADULTOS
É UM ACTO CIRURGICO
SÓ PODE SER FEITO
POR UM MÉDICO-VETERINÁRIO



**EFFECTUADO SEM ANESTESIA
DEVE SER CONSIDERADO
CRUELDADE E DEVE SER
PUNIDO POR LEI.**

Podemos reduzir (eliminar?) a dor



BOAS PRÁTICAS



1. Sedação (opcional)
ou boa contenção



COMPARISON OF TWO TOPICAL TREATMENTS ON WOUND HEALING 7 DAYS AFTER CAUTERY DISBUDDING

Journal:	<i>New Zealand Veterinary Journal</i>
Manuscript ID	TNZV-2019-0141.R1
Manuscript Type:	Short Communications
Date Submitted by the Author:	n/a
Complete List of Authors:	Stilwell, George; University of Lisbon, Faculty of Veterinary Medicine Laven, Richard; Massey University, IVABS
Keywords:	calf, disbudding, wound, healing, pain

3. Analgésico

5. Cicatrizante-desinfectante



Descorna
em termocautério





Cuidados

- Evitar descornar após 2 meses de idade.
- Criar uma rotina de descorna para não haver “esquecidos”.
- Primeiro verificar se se trata de um animal moxo.
- Evitar horas do dia de mais calor.
- Proteger do sol, chuva e insectos durante 24 horas.

SITUAÇÃO AINDA ACTUAL????



Descorna de bovinos Castelo Branco • OLX Portugal

olx.pt/anuncio/descorna-de-bovinos-IDylv0h.html ▼ Translate this page

Jan 23, 2016 - 6 €: Preço sob consulta, consoante número de animais e deslocação. O método utilizado será o mais rápido, eficaz, de rápida cauterização e ...

QUEM PRESTA ESTES SERVIÇOS?

COMO CONTROLAR?

PROCURAR ALTERNATIVAS

- MUTILAÇÃO É REALMENTE NECESSÁRIA?
- Mudança de hábitos.
- Criação de condições óptimas de exploração.
 - Espaço nos parques.
 - Mangas de qualidade.
 - Dividir em grupos adequados às capacidades de maneio.
 - Espaço suficiente nas manjedouras.
 - Distribuição extensa de comida.
- Selecção genética de linhagens moxas.
- Corte da ponta ou piton dos cornos.

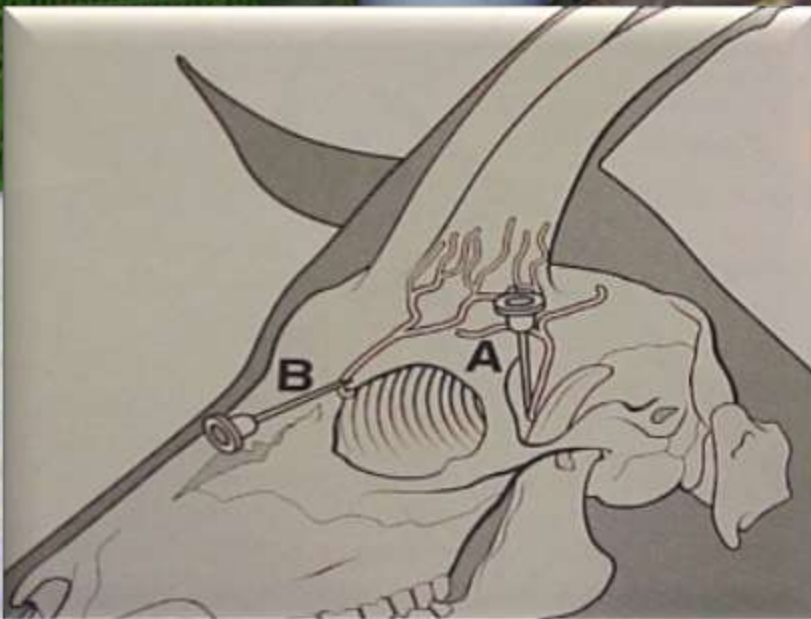
Descorna caprinos

- ANESTESIA REGIONAL EM DOIS NERVOS É DIFÍCIL DE CONSEGUIR.

- CABRITOS MUITO SENSÍVEIS A ANESTÉSICOS LOCAIS.

- OBRIGATÓRIO ADMINISTRAR ANALGÉSICO (fácil e barato)

- DESCORNA DE ANIMAIS ADULTOS É UM ACTO CIRURGICO





Amputação da cauda em ovinos



Effects of Four Analgesic Treatments on the Behavioural and Cortisol Responses of 3-week-old Lambs to Tail Docking

M. J. GRAHAM, J. E. KENT and V. MOLONY

Department of Preclinical Veterinary Sciences, Royal (Dick) School of Veterinary Studies, Edinburgh University, Summerhall, Edinburgh EH9 1QH, UK

The Veterinary Journal 2002, 164, 249–253

doi:10.1053/vet.2002.1739, available online at <http://www.elsevier.com/locate/vetj>



Short Communication

The Influence of the Site of Application on the Behavioural Responses of Lambs to Tail Docking by Rubber Ring

M. J. GRAHAM*, J. E. KENT† and V. MOLONY†

*Moredun Research Institute, Pentlands Science Park, Bush Loan, Pentlands, Midlothian EH26 9PZ, UK; †Animal Welfare Research Group, Department of Preclinical Veterinary Sciences, Royal (Dick) School of Veterinary Studies, Summerhall, Edinburgh EH9 1QH, UK

The Veterinary Journal 1998, 155, 39–51



Comparison of Methods for the Reduction of Acute Pain Produced by Rubber Ring Castration or Tail Docking of Week-old Lambs

J. E. KENT*, V. MOLONY and M. J. GRAHAM

Department of Preclinical Veterinary Sciences, Royal (Dick) School of Veterinary Studies, University of Edinburgh, Summerhall, Edinburgh EH9 1QH, Scotland

Small Ruminant Research, 3 (1990) 73–76

Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

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Technical Note

Influence of Docking Fat-Tail (Karakul) Sheep on Lamb Production

M. SHELTON

Texas Agricultural Experiment Station, 7887 N. Highway 87, San Angelo, TX 76901 (U.S.A.)

(Accepted 26 January 1989)

Livestock Science 230 (2019) 103837



Contents lists available at ScienceDirect

Livestock Science

journal homepage: www.elsevier.com/locate/livsci



Tail docking in sheep (*Ovis aries*): A review on the arguments for and against the procedure, advantages/disadvantages, methods, and new evidence to revisit the topic

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^aFacultad de Ciencias Agrarias, Universidad Autónoma del Estado de México, Av. Universidad 3001, Colonia Chantlaj, Cuernavaca, México 62210, México

^bDepartamento de Fisiología, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay



Applied Animal Behaviour Science 188 (2017) 26–35



Contents lists available at ScienceDirect

Applied Animal Behaviour Science

journal homepage: www.elsevier.com/locate/applanim



Self-administration by consumption of flunixin in feed alleviates the pain and inflammation associated with castration and tail docking of lambs

Danila Marini^{a,b,*}, Ian G. Colditz^a, Geoff Hinch^b, J. Carol Petherick^c, Caroline Lee^a

^aCSIRO Agriculture, ID McMaster Laboratory, New England Highway, Armidale, NSW, 2350, Australia

^bSchool of Environmental and Rural Sciences, University of New England, Armidale, NSW, 2350, Australia

^cQAM, The University of Queensland, Brisbane St Lucia, QLD, 4072, Australia



A aplicação tópica de anestésicos locais (lidocaína e bupivacaína) reduz a dor durante a desbridagem das lesões expostas de úlcera da sola.



J. Dairy Sci. 102
<https://doi.org/10.3168/jds.2018-15820>
© American Dairy Science Association®, 2019.

Use of topical local anesthetics to control pain during treatment of hoof lesions in dairy cows

G. T. Stilwell,^{1*} A. M. Ferrador,¹ M. S. Santos,¹ J. M. Domingues,¹ and N. Carolino²

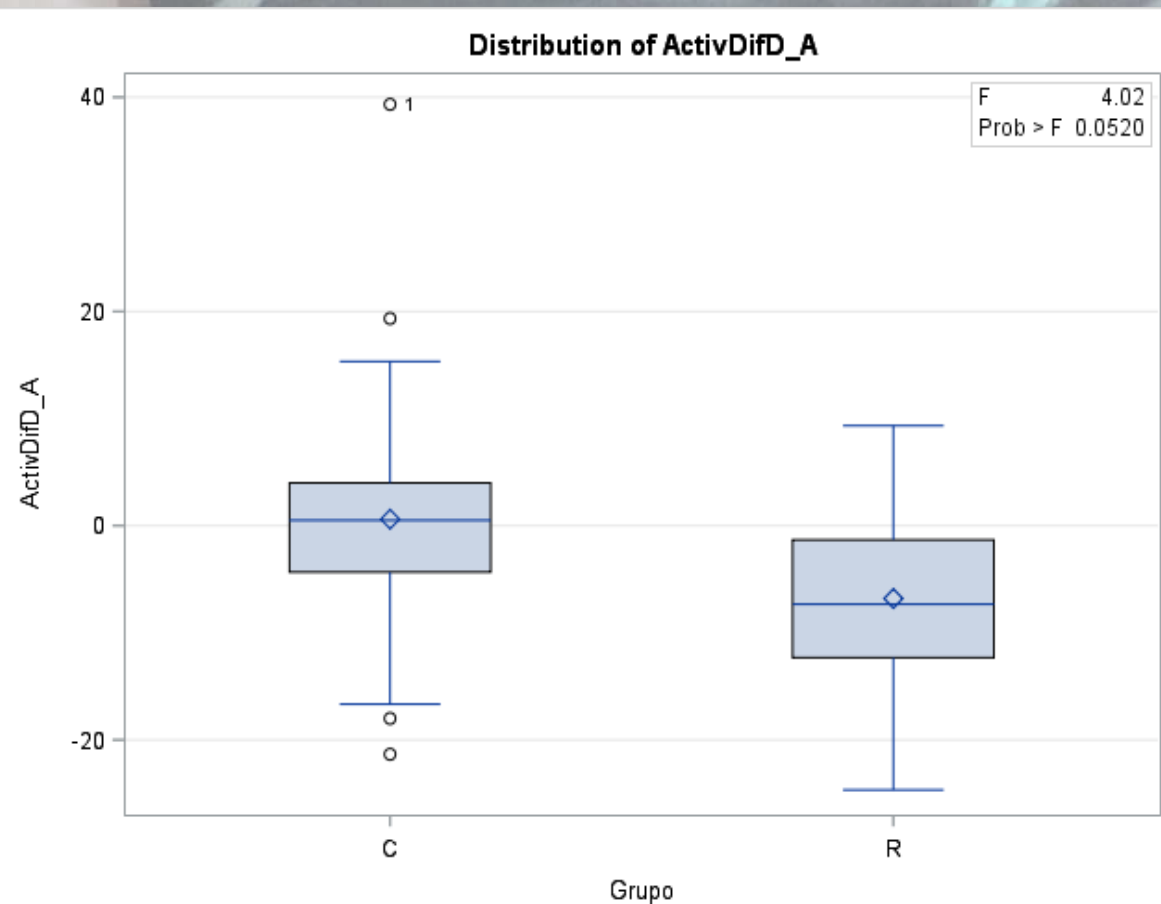
¹Animal Behavior and Welfare Laboratory, Center for Interdisciplinary Research in Animal Health, Faculty of Veterinary Medicine, Lisbon University, Lisboa, Lisboa 1300-477, Portugal

²Instituto Nacional de Investigação Agrária e Veterinária, I.P., Unidade Estratégica de Investigação e Serviços de Biotecnologia e Recursos Genéticos, Polo de Investigação da Fonte Boa, Vale de Santarém 2005-048, Portugal





Diferença estatisticamente significativa entre os Grupo C e R



Maior actividade nos animais que não receberam analgesia – maior movimentação da cabeça

MENSAGENS

- Desprezar exigências de bem-estar do consumidor é um enorme tiro no pé!
- Intervenções de rotina dolorosas não têm de ser dolorosas.
- O custo do manejo da dor é largamente compensado.

Agradecimentos

Ricardo Romão e Elisa Bettencourt (Universidade de Évora)
Martha Stilwell d'Andrade (Herdade do Azinhal)



Obrigado