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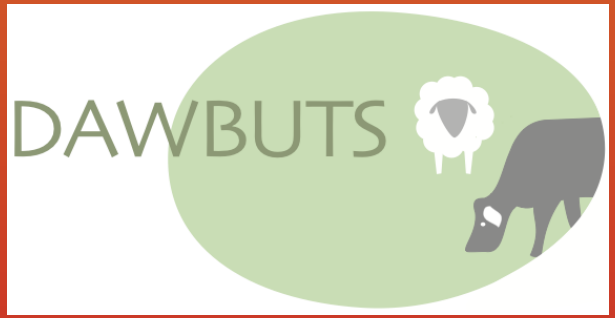
For the latest in red meat R&D

Pain relief for husbandry procedures in cattle, sheep and goats

Matthew Playford

Dawbuts Pty Ltd



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‘the reduction of behavioural and physiological responses by an animal to a painful stimulus to a level judged to be reasonable’

AUSTRALIAN INDUSTRY WELFARE STANDARDS AND GUIDELINES
Animal Health Australia

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Tip #1
Consult your livestock vet

Pain relief can take different forms

1. Analgesia – may also have a sedative effect.

2. General anaesthetic – animal is heavily sedated (asleep) for duration of procedure. For major or prolonged operations.

3. Local anaesthetic – spray or injection, stops transmission of painful stimulus through nerve blockage.

4. Anti-inflammatories e.g. NSAIDS – reduce inflammatory response and swelling, tissue damage and pain that result.

Fast pain

The body’s protection mechanism against injury.

Intense, transmitted by nerves to brain.

Lasts about one hour.

Slow pain

Ongoing pain associated with inflammation as a result of an injury or surgery.

Lasts for days.

Surgical procedures that require pain relief

1. Castration of older animals (sheep, cattle and goats)
   >6m of age (12m if first yarding for cattle)
2. Tail-docking and mulesing of lambs (compulsory if >6m of age)
3. De-horning of cattle and goats
   Cattle >6m (12m if first yarding)
   Goats >6m
4. Any painful procedure at any age.

Pain relief not required

Vaccinations

Drenching

Pour-ons

Dipping

Spraying

Branding

Tip #2
Animal handling

- Focus on low-stress handling, minimum time restrained, avoid metabolic impacts
- Slow and calm
- Weather
- Water
  - portable yards
  - permanent yards.

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Campbell, Vizard & Larsen

Improving lamb survival

Survival of lambs strongly linked to:
a) mothering up

b) nutrition

c) bodyweight at weaning.

Weaner survival

Table 1. **Total number of weaners and those that died in each within-cohort weaning body weight quintile, mortality and cumulative mortality rate during the first year after weaning, and risk relative to the middle quintile (95% confidence interval)**

WBW quintile	Weaners (n)		Mortality (%)	CMR (/1000/month)	Relative risk
	Total	Died			
1	758	224	29.6	35.7	3.5 (2.7–4.6)
2	738	109	14.8	15.6	1.5 (1.1–2.0)
3	722	79	10.9	11.1	1.0 reference
4	745	57	7.7	7.6	0.7 (0.5–1.0)
5	676	50	7.4	7.2	0.7 (0.5–1.0)

CMR, cumulative mortality rate; WBW, weaning body weight.

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Lamb-marking

Castration

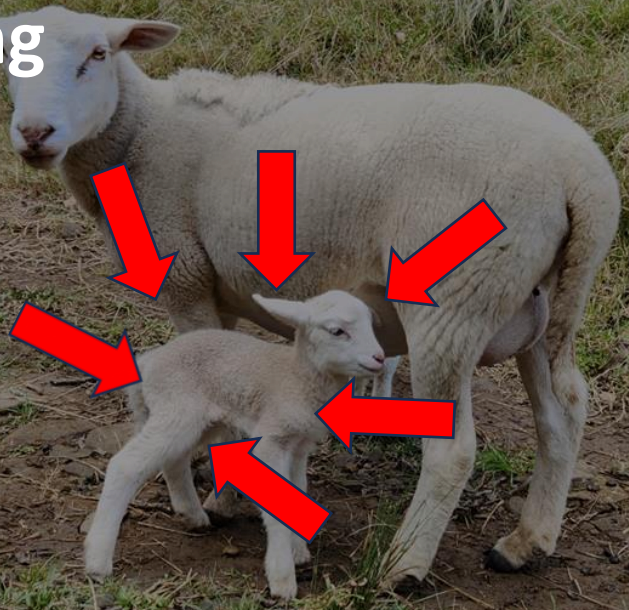
Tail-docking

Mulesing

Eartagging

Earmarking

Vaccinations



Tip #3
Gentle handling

Products for lamb marking

Whole body

Injectable meloxicam (vet)

Buccal meloxicam

Local nerve blockade

- Lignocaine injection (vet)
- NumNuts
- Trisolfen

Duration of pain relief

Short-term pain- Trisolfen, NumNuts, injectable lignocaine.

Long-term pain – meloxicam (injection or buccal).

Mixture (combination) is best practice.

CHAPTER 04 | TOPICAL ANAESTHETICS | TRI-SOLFEN

Tri-solfen contains a combination of **2 local anaesthetics**, **adrenaline,** and an **anti-septic** (cetrimide).

EASY TO APPLY **Spray** on an open mulesing or tail dock wound.

REDUCES BLOOD LOSS The adrenaline in Tri-Solfen constricts damaged blood vessels at the site to help **reduce blood loss**.

ANTISEPTIC Assists in **wound healing** and **lowers infection risk**.

For Flocks Sake
Health • Genetics • Data

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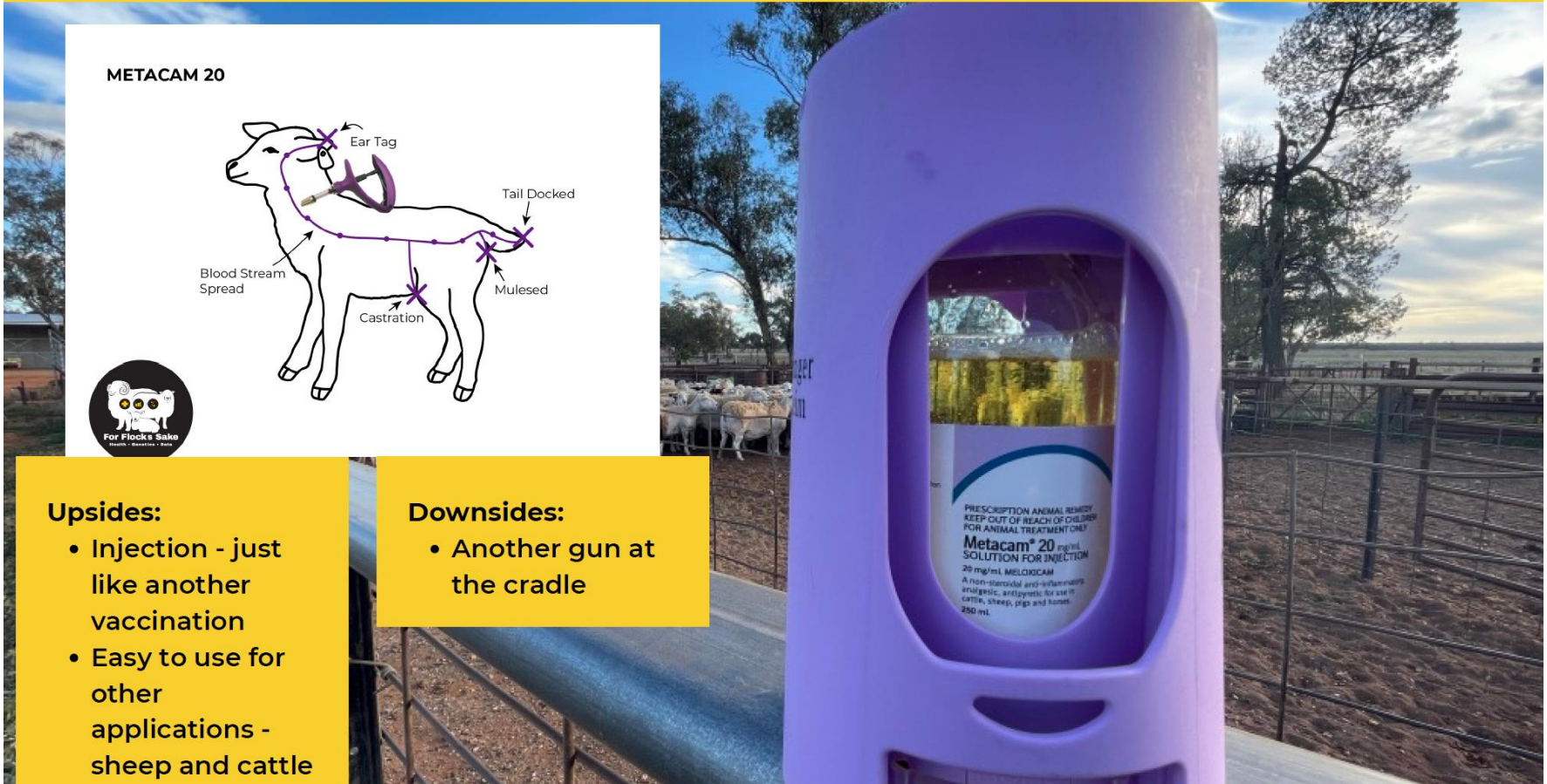
ANALGESICS/ANTI-INFLAMMATORIES

How It Works - Injectable Meloxicam (Metacam, Meloxxi)



Upsides:

- Injection - just like another vaccination
- Easy to use for other applications - sheep and cattle

Downsides:

- Another gun at the cradle

Tip #4 Eartags

Wrong

Right

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Ear

meat

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Care of lambs after marking

1. Release immediately to mother up.
2. Don’t move mob until all lambs mothered up.
3. Avoid walking long distance.
4. Preferably use portable yards in lambing paddock.

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GUIDE TO THE USE OF PAIN RELIEF IN THE GRASS-FED BEEF CATTLE SECTOR

8 October 2020

The information contained in this document does not constitute advice and in no way replaces advice from a veterinary practitioner.

Schedule 4 pain-relief compounds are only available from a vet. If intending to use S4 products on cattle, producers must have consulted with a veterinarian.

Pain relief is not a replacement for good animal welfare practice as described in the Animal Welfare Standards and Guidelines for Cattle. Surgical procedures can also be replaced with non-surgical options, where practical, and can have wider benefits for producers, such as cost savings.

Prepared by Cattle Council of Australia with support from Meat & Livestock Australia.

CATTLE COUNCIL OF AUSTRALIA

PURPOSE OF THIS DOCUMENT

This document is presented as a **guide only** for producers considering the use of pain relief when conducting certain aversive procedures on their cattle as part of routine management.

WHY NOW?

Producers' access to registered pain-relief compounds has recently improved. Each compound has a different purpose, so it is important to match the planned procedure with the most relevant compound or combination of compounds. If in doubt, veterinarians are best placed to advise.

IS PAIN RELIEF COMPULSORY?

Animal Welfare Standards for Cattle are being regulated progressively by state/territory governments. When regulated within a state or territory, the use of pain relief **will be** compulsory for castration and dehorning of animals above certain ages – for details see the *Animal Welfare Standards and Guidelines for Cattle (Standards 6.2 and 6.4)*. Producers are encouraged to consider pain relief for aversive procedures on all their cattle.

WHAT PROCEDURE?	PAIN TYPE	PAIN RELIEF OPTIONS
Disbudding/dehorning →	Refer to Table 1.1 in this document →	Refer to Table 2 in this document
Spaying →		
Castration →		
Branding →	Refer to Table 1.2 in this document →	
Ear notching and tattooing →		

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Table 1.1 – Surgical procedures and pain types

PROCEDURE	LIKELY PAIN TYPE	PAIN-RELIEF OPTIONS (see Table 2 for details)
Disbudding/ dehorning	• Immediate (Phasic), due to nerve damage at the site of injury AND • Inflammatory (Tonic), slightly slower onset, longer duration AND • Long-lasting (Chronic) (< 6 weeks), inflammatory or neuropathic	• Multi-modal using local anaesthetic PLUS longer-acting Non-Steroidal Anti-inflammatory Drugs (NSAIDs)[1] • If using Tri-solfen® as the local anaesthetic, ensure proper adhesion of the spray to the wound • If done at marking, would be covered by the NSAID administered for other procedures
Castration	• Immediate (Phasic), due to nerve damage at the site of injury AND • Inflammatory (Tonic), slightly slower onset, longer duration AND • Long-lasting (Chronic) (< 6 weeks), inflammatory or neuropathic	• Multi-modal using local anaesthetic (Tri-solfen®) PLUS longer-acting NSAID • If done at marking, would be covered by the NSAID administered for other procedures
Spaying (Dropped Ovary Technique)	• Immediate (Phasic), due to nerve damage at the site of injury AND • Inflammatory (Tonic), slightly slower onset, longer duration AND • Long-lasting (Chronic) (< 6 weeks), inflammatory or neuropathic	• Long-acting NSAID • Tri-solfen® must not be used internally (e.g., when spaying using the dropped ovary technique)

Table 1.2 – Minor procedures that benefit from being undertaken at the same time as surgical procedures

PROCEDURE	LIKELY PAIN TYPE	PAIN-RELIEF OPTIONS (see Table 2 for details)
Fire branding	• Immediate (Phasic), due to nerve damage at the site of injury AND • Inflammatory (Tonic), slightly slower onset, longer duration	• NSAID • If done at marking, would be covered by the NSAID administered for other procedures
Freeze branding	• Inflammatory (Tonic), slightly slower onset, longer duration	• NSAID • If done at marking, would be covered by the NSAID administered for other procedures
Ear Notching and tattooing	• Immediate (Phasic), due to nerve damage at the site of injury AND • Inflammatory (Tonic), slightly slower onset, longer duration	• NSAID • If done at marking, would be covered by the NSAID administered for other procedures

[1] NSAIDs are analgesics that reduce pain by suppressing inflammation. They do not totally block (anaesthetise) pain.

Table 2 – Summary table of pain-relief products

PAIN RELIEF OPTIONS	SOURCE	WHP/ESI[2]	INDICATIVE COST[3]	COMMENTS
Local anaesthetic • Tri-Solfen®[4,5] for open-wound spray-on (after the injury)	S5 Over the counter	WHP 90 days ESI 90 days	$2.30 plus GST Depends on number of sites treated	• Depletion trials have not been done so default WHP and ESI of 90 days apply • Topical spray contains anaesthetic to reduce pain and adrenaline to reduce blood loss • Almost-immediate effect • 24-hour relief
Local anaesthetic • Lignocaine for nerve block injection(s) (before the procedure	S4 Vet only	WHP nil ESI not established	Highly variable, depends on vet's costs, type of procedure, retail mark-up, etc.	• Almost-immediate effect • Residue depletion work yet to be done • Must be administered by a veterinarian
Non-Steroidal Anti-inflammatory Drugs (NSAIDs)[6] – 33 in total, as follows: • Meloxicam Buccalgesic® (cheek pouch gel) and Metacam® (injection), +10 other registered products • Flunixin (13 registered products) • Ketoprofen (5 registered products) • Tolfenamic acid (3 registered products)	S4 Vet prescription	WHP 11-14 days ESI 17-21 days Products vary – read the label and seek veterinary advice	Buccalgesic®, $4.30 plus GST Metacam®, $5.50-6.50 plus GST Others?	• 10-15 minutes to take effect • Effective 1-8 hours (pain relief benefits up to 3 days) • Prescription remedies – available from/through veterinarians[7] • Some label claims are procedure-specific • Buccalgesic® is administered as a gel into the cheek cavity – more suitable for young cattle • Metacam® is applied as a subcutaneous injection • Can be given before or during the procedure • NSAIDs do not lead to anaesthesia (loss of feeling)

Dehorning

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Recommendations

All kids undergoing disbudding must be provided analgesia. If the procedure is not performed by a veterinarian, then the operator should obtain appropriate analgesia and instructions for effective use from a registered veterinarian with whom there is an established bona-fide veterinary-client-patient-relationship.

There are currently no registered pain relief options for use in goats. Products that have been used by veterinarians include Tri-Solfen® (a topical preparation containing local anaesthetics and adrenaline), injectable and oral meloxicam. Injectable meloxicam at 0.5mg/kg has been shown to reduce pain for 24hr post disbudding.[3,6] There have been no studies examining the efficacy of Tri-Solfen® for pain relief in goat disbudding. These products can be supplied off label to goat owners by veterinarians who have a demonstrated bona-fide veterinary-client-patient-relationship.

Take home messages

1. Pain relief is easy to apply and cost-effective.
2. Benefits include:
    a) animal welfare
    b) productivity
    c) trade and sustainability
3. Short-term and long-term pain addressed with different products.
4. Anti-inflammatories/analgesics last longer and cover several sites.
5. Combination therapy is best approach.

Tools and resources

1. Dr. Jillian Kelly – AHN Consulting https://www.ahnconsulting.com.au/
2. Dr. Tim Gole – For Flock's Sake https://www.flockssake.com.au/
3. Animal Welfare Standards and Guidelines for sheep, goats and cattle
4. MLA best practice for castration of cattle
5. MLA Sheep husbandry practices guide https://www.mla.com.au/research-and-development/animal-health-welfare-and-biosecurity/sheep-husbandry/
6. MLA Going into goats: A practical guide to producing goats in the rangelands
7. CCA - guide to the use of pain relief in the grass-fed beef cattle sector https://futurebeef.com.au/wp-content/uploads/2020/02/201008-CCA-pain-relief-guide.pdf

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