

**AWI Breech Strike R&D Technical Update**  
**Maritime Museum, Sydney**  
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**CSIRO Pain Relief Study**



# Rationale for Welfare Study

- Mulesing is necessary in many flocks to prevent flystrike
- Pain Relief available: Tri-Solfen<sup>®</sup>, Metacam<sup>®</sup>
- Pain Relief coming: Buccalgesic<sup>®</sup> (castration and tail dock)
- 'Best Practice' analgesia would provide ongoing pain relief
  - E.g. Local Anaesthetic, followed by longer acting NSAID



# Rationale for Welfare Study

- We know: Tri-Solfen<sup>®</sup> alleviates pain following surgical mulesing
- Key questions:
  - Does Buccalgesic<sup>®</sup> alleviate pain following surgical mulesing?
  - Does a combination strategy of Tri-Solfen<sup>®</sup> and Buccalgesic<sup>®</sup> provide further benefits over one agent alone?
- Provide data to support registration of Buccalgesic<sup>®</sup> for purpose of mulesing with APVMA



# Treatment Groups

Treatment code	Procedure	Therapeutic agent	No. lambs
1	Sham Controls, handled	Placebo	20
2	Surgical mulesing and hot knife tail docking	Placebo	20
3	Surgical mulesing and hot knife tail docking	Buccal meloxicam	20
4	Surgical mulesing and hot knife tail docking	Tri-Solfen	20
5	Surgical mulesing and hot knife tail docking	Placebo Tri-Solfen	20
6	Surgical mulesing and hot knife tail docking	Buccal meloxicam Tri-Solfen	20

Therapeutic agents applied at the time of mulesing  
Placebo: Gel base as per Buccalgesic, with no active agent



# Methods available

- Behaviour
- Physiology
- Tissue damage and repair
- Clinical Observations (health)
  
- Options of Pen-based study or Field-based study



# Pen Study

- Study conducted in an animal house
- Lambs 6-10 weeks old and still on their mothers
- Behaviours monitored by video for 6 h following mulesing
- Blood samples collected for haematology and:
  - 0, 30min, 6h, 12h, 24h (Cortisol)
  - 0, 24h, day 4, 7 and 10 (Haptoglobin)
- Bodyweights measured at day -7, -1, 4, 7 and 10
- Wound score and sensitivity on days 4, 7 and 10





# Thereafter

- Data entry and checking
- Laboratory analyses
  - Haematology
  - Cortisol
  - Haptoglobin
- Video analyses
  - Acute pain avoidance behaviours (2 hr)
  - Postural changes (6 hr)
- Statistical analyses
- Report preparation



# Field Study

- Study conducted in a paddock situation
- Lambs 6-10 weeks old and still on their mothers
- Behaviours monitored live:
  - Snapshot observations of behaviour at 5 min, 15 min and every 15 min thereafter for 6 hours following mulesing on day 0
  - 8 snapshot observations at 15 min intervals on day 1
  - 5 snapshot observations at 15 min intervals on days 2-10
- Bodyweights measured at day -7, -1, 4, 7 and 10
- Wound score and sensitivity on days 4, 7 and 10





# Thereafter

- Data entry and checking
- Statistical analyses
- Report preparation

- Not yet available but very close
- So far outcomes appear encouraging against the key questions:
  - Does Buccalgesic<sup>®</sup> alleviate pain following surgical mulesing?
  - Does a combination strategy of Tri-Solfen<sup>®</sup> and Buccalgesic<sup>®</sup> provide further benefits over one agent alone?
- Trials ongoing assessing Liquid Nitrogen Process



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