clipfitter

Plain language Science – **Tail Docking**

SRUC 2022 Science

ClipFitter Performance on <u>Tails</u> (Tail Docking)

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1. Pain in the First Hour After Tail Docking

Young lambs (<7 days)

- ***ClipFitter (CE) and Best Practice with anaesthetic/analgesic (BP)*** *caused* ***similar levels of active pain behaviours***.
- *Both CE and BP lambs showed* ***more easing-quarters and REW (active pain score)*** *than handled controls, but* ***did not differ from each other***.
- *No significant differences in:*
  - *Time spent standing, walking, lying*
  - *Teat-seeking*
  - *Play behaviour*
- ***Conclusion:*** *ClipFitter's pain profile for tail docking in young lambs was* ***equivalent to using a rubber ring with local anaesthetic + NSAID***.

Older lambs (5–6 weeks)

- *Both CE (**ClipFitter**)and BP (**rubber ring, local anaesthetic + NSAID**) groups showed more pain behaviours than controls.*
- *Compared **CE vs BP**:*
  - *BP lambs had **higher tail wagging and head turning** than ClipFitter lambs.*
  - *CE lambs had **lower arousal (more calm/sleepy)** in QBA than BP in some measures.*
  - *CE and BP were broadly equivalent on overall REW pain scores.*
- ***Conclusion:*** *Behavioural pain responses for tail docking older lambs were* ***similar between ClipFitter and rubber ring + full pain relief****, with some indicators being* ***lower in the CE group***.

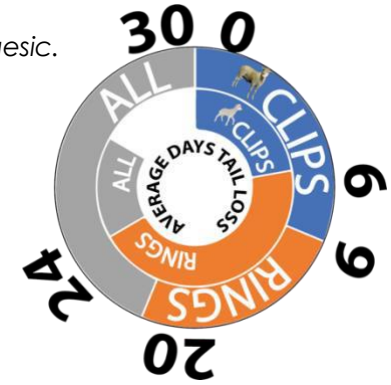
2. Tissue Shedding (Speed of Tail Fall-off)

This is one of the clearest welfare advantages in the study.

Young lambs

- ***ClipFitter:*** *Median 5 days (IQR 2.25–11.5)*
- ***Best Practice ring + pain relief:*** *Median 20.5 days (IQR 14.5–22.5)*

➡ ***ClipFitter tails fell off around 4× faster*** *than ring + anaesthetic + analgesic.*



Older lambs

- ***ClipFitter:*** *Median 10 days (IQR 9–11)*
- ***Best Practice ring + pain relief:*** *Median 19.5 days (IQR 18–23.75)*

➡ *Again,* ***ClipFitter shed tissues ~2× faster****, even at older ages.*

Interpretation:
Faster tissue loss = shorter duration of necrotic tissue attached, likely reducing long-term discomfort and reducing flystrike risk.

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3. Lesion Scores (Severity of tissue damage)

Young lambs

- *CE lambs had initially slightly higher lesion scores than BP on days 2–10.*
- *By day 20 and 24,* ***ClipFitter had lower severity than BP****.*
- *Responding to palpation (pain on touch) was low in all groups; no major differences.*

Older lambs

- *Early lesions were higher in CE for a short period (days 2–12), but:*
  - *BP lambs also had notable lesions*
  - *By the end of the observation period,* ***both treatments were similar***
- *Palpation responses:*
  - *CE lambs were generally not more sensitive than BP lambs after day 6.*
  - *BP lambs were more reactive to palpation on days 12 and 16.*

Interpretation:
ClipFitter produces lesions consistent with expected controlled crush-necrosis, comparable to Best Practice. Some early lesions are more visible but reduce faster over time.

4. Growth Rates

- ***No difference** in weight gain following ClipFitter tail docking at either age.*
- *Weight gains of CE lambs were statistically indistinguishable from BP and controls.*

Interpretation:
*ClipFitter does **not impair growth**, indicating no significant lasting stress or welfare suppression.*

<u>Overall Conclusion</u> — ClipFitter for Tail Docking

Pain

- ***Equivalent to Best Practice (rubber ring + local anaesthetic + NSAID)** in both young and older lambs.*
- *In older lambs, ClipFitter shows **equal or slightly lower** behavioural indicators compared with Best Practice.*

Tissue Loss Speed

- ***Dramatically faster loss of tail tissue** than rubber ring methods (even with anaesthetic).*
- *5 days vs 20+ days in young lambs.*
- *10 days vs ~20 days in older lambs.*

This is one of the strongest welfare advantages demonstrated.

Lesions

- *CE early lesions can be slightly more pronounced but resolve quickly.*
- *By the end of the healing period, CE and BP lesions are equivalent or CE is better.*

Palpation sensitivity

- *Very low across all groups.*
- *No evidence that ClipFitter causes more pain on handling the wound.*

Growth

No negative impact.

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Plain language Science – **Tail Docking**

ClipFitter Tail Docking – 1 Page Scientific Summary

Pain Response (First Hour)

- ***Young lambs (<7 days):*** *ClipFitter pain behaviours equivalent to Best Practice (ring + anaesthetic + NSAID).*
- ***Older lambs (5–6 weeks):*** *ClipFitter pain similar to Best Practice; some indicators lower for ClipFitter.*
- ***Conclusion:*** *ClipFitter matches veterinary pain-relief standards for tail docking.*

Tissue Loss Speed

- ***Young lambs:*** *ClipFitter tails shed in* ***5 days*** *vs* ***20+ days*** *with Best Practice rings.*
- ***Older lambs:*** *ClipFitter tails shed in* ***10 days*** *vs* ***19+ days*** *with Best Practice.*
- ***Conclusion:*** *ClipFitter reduces duration of necrotic tissue by 2–4×.*

Lesions & Healing

- *Early lesion scores: slightly higher for ClipFitter but resolve quickly.*
- *Later healing: ClipFitter equal to or better than Best Practice.*
- *Palpation sensitivity: low in all groups, with no increased pain in ClipFitter lambs.*

Growth Rates

- *No reduction in weight gain for ClipFitter tail-docked lambs at either age.*
- ***Conclusion:*** *No negative welfare or performance impact.*

Overall Summary

ClipFitter tail docking provides welfare outcomes equivalent to using rubber rings with full veterinary pain relief, while dramatically shortening the period lambs carry dead tissue. Healing outcomes and growth performance match or outperform current Best Practice methods.

Key Take-aways

Pain: *Equal to Best Practice*
Lesions: *Resolve efficiently*

Tail Shedding: *Faster by 2–4×*
Growth: *Normal*

*The report does look at pain and discomfort **well beyond the first 60 minutes**, but it uses different measures.*

What they measured <u>after 1 hour</u>

*Beyond the first hour, they stopped the intense second-by-second ethogram work and instead used **long-term welfare indicators**:*

1. ***"Chronic pain" behaviour scans***
   - *Lambs were observed in the pen for **3 × 1-hour periods every 3–4 days**, for up to **25–30 days** after treatment, to pick up any **ongoing pain-type behaviours**.*
   -
2. ***Lesion scores at the wound***
   - *Detailed scoring of the **size/severity of the wound area** around the tail or scrotum on repeated days (young lambs: days 2, 6, 10, 13, 17, 20, 24; older lambs: days 2, 5, 9, 12, 16, 19, 23, 26, 30).*
   -
3. ***Response to palpation (pain on touch)***
   - *At each lesion check, they **pressed/palpated** the area and scored whether the lamb reacted as if it was sore.*
   -
4. ***Time to shed necrotic tissue***
   - *They recorded how many days it took for the **dead tail tissue to fall off**, as a proxy for how long the lamb is carrying a dead, potentially uncomfortable stump.*
   -
5. ***Growth rates***
   - *Weighing lambs over several weeks (up to 4–12 weeks, depending on age group) to see if any method was associated with **poorer weight gain**, which can indicate longer-term stress or discomfort.*

What they found about ongoing pain

*Focusing on **tail docking and ClipFitter**:*

- ***Chronic pain behaviours (scan sampling up to 30 days)***
  *The report doesn't show a big, dramatic difference between methods in those longer-term behaviour scans; the important point is that there was **no strong evidence of persistent abnormal pain behaviour** in any group after the early post-op period.*
- ***Lesions – tails***

- ***Young lambs (tails):***
  - *ClipFitter (CE) lambs had **higher lesion scores** than Best Practice (BP – ring + LA + NSAID) early on (days 2–20), but by day 24 **BP lambs actually had higher lesion scores than CE**.*
  -
- ***Older lambs (tails):***
  - *CE and BP both had higher lesion scores than handled controls early.*
  - *CE tended to have **higher early lesions than BP**, but **by the later checks the lesion severity between CE and BP converged**, and both were clearly worse than "handled only", as expected after surgery*
  -

Palpation (pain on touch)

- *For **tail docking**, responses to palpation were:*
  - *Seen only on a few early days (mainly days 2, 6, 13).*
  - *Generally **infrequent**, and where there was a tendency, **BP lambs often reacted more than ClipFitter lambs** (e.g. on day 2 for young tails, and on days 12 & 16 for older tails).*
  -
- *The authors summarise that **overall lamb responses to palpation were rare and mainly confined to the first few days**, with **little evidence of persistent pain differences** between methods.*
-

Time to tail loss (very relevant for tails)

- *Young lambs:*
  - ***ClipFitter tails fell off much faster**: median 5 days vs 20.5 days with BP rings.*
  -
- *Older lambs:*
  - *CE: median 10 days vs 19.5 days with BP rings.*
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- *The authors interpret this as **likely less long-term discomfort** with ClipFitter, because the lamb is not carrying dead tissue for as many days.*
-

Growth

- ***No significant effect of tail docking method on weight gain** in either age group.*
-
- *That suggests **no substantial ongoing welfare cost** from ClipFitter compared with Best Practice.*

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Plain language Science – **Tail Docking**

In one sentence – Pain & Discomfort after 1 hour

*Yes: the study did assess pain and discomfort beyond the first hour, using chronic behaviour scans, lesion and palpation scores, time to tissue loss and growth. For **tails**, these long-term measures showed **no evidence of worse ongoing pain with ClipFitter**; if anything, **faster tail loss and comparable or better palpation/lesion patterns** suggest less prolonged discomfort than rubber-ring-based methods.*

Overall Conclusion — ClipFitter for Tail Docking

Pain

- ***Equivalent to Best Practice (rubber ring + local anaesthetic + NSAID)** in both young and older lambs.*
- *In older lambs, ClipFitter shows **equal or slightly lower** behavioural indicators compared with Best Practice.*

Tissue Loss Speed

- ***Dramatically faster loss of tail tissue** than rubber ring methods (even with anaesthetic).*
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- *Very low across all groups.*
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Growth

- *No negative impact.*

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10. ***Growth rates***
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What they found about <u>ongoing</u> pain

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