The effect of mixing after weaning on tail biting during rearing

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**What is tail biting?**

Tail biting can be classified into three categories (Taylor et al., 2010):

- **“Two stage“**
  - Low-stimulus environment

- **“Sudden-forceful“**
  - Lack of resources

- **“Obsessive“**
  - Individuals with health problems

**Consequences:**

- Reduced animal welfare
- Possible spread of infections
  - Economic losses

- Can a renunciation of mixing after weaning prevent tail biting?

- How do the piglets behave prior tail biting outbreaks on individual level?
Materials & Methods

- **Observation period**: January until April 2014
- **Renunciation of tail docking**

Litter-wise groups

- **n= 240 (♂124, ♀116)**

Mixed-litter groups

- **n= 238 (♂117, ♀121)**

- **Offering of alfalfa hay** once per day
- **Weekly scoring** of the tails
**Scoring**

**Damage**
- No visible damage
- Scratches, light bite marks
- Moderate damage
- Severe damage

**Tail length / Loss of tail**
- Original
- Loss of tail tip (max. ¼)
- Partial loss (at least ¼)
- Total loss / Necrosis

**Bite occurrence & tail losses**

**Tail losses**

**Bite occurrence**
Scoring

- Original length
- Loss of tail tip
- Partial and total losses
**Model**

Procedure Glimmix (SAS® 9.2): „Multinomial subject specific model“

**Target variables:**
- Bite occurrence
- Tail losses

**Fixed effects:**
- Group (Litter-wise, Mixed-litters)
- Batch (1-5)
- Week after weaning (1-6)
- Interaction of group and batch

**Random effect:**
- Piglet (nested in group and batch)
Bite occurrence - Week effect

Estimated frequencies over 6 weeks after weaning

Number of animals (%)

No visible damage
Scratches, light bite marks
Moderate damage
Severe damage

Week after weaning

1          2           3           4          5           6
100
80
60
40
20
0
Estimated frequencies over 5 batches

Bite occurrence – Interaction group*batch

Litter-wise groups

Mixed-litter groups

Number of animals (%)

Batch

No visible damage
Scratches, light bite marks
Moderate damage
Severe damage

1 2 3 4 5

1 2 3 4 5
Tail losses – Interaction group\textsuperscript{*}batch

Estimated frequencies over 5 batches at the end of rearing

<table>
<thead>
<tr>
<th>Litter-wise groups</th>
<th>Mixed-litter groups</th>
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<tbody>
<tr>
<td>Batch 1</td>
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Number of animals (%)

- Original length
- Loss of tail tip (max. $\frac{1}{4}$)
- Partial loss (min. $\frac{1}{4}$)
- Total loss / Necrosis
Materials & Methods

5 pens (60 piglets), 6 am to 6 pm, first 20 min of every second hour, five days prior and the day of a tail biting outbreak

- Instantaneous scan sampling (every 2 min):
  - Lying, standing, feeding, occupation with raw material and pen surroundings

- Continuous observation:
  - Anogenital contact, belly nosing, nosing

  → Determination of victims, offenders and "neutral" piglets

Materials & Methods

Video analysis
Results & Discussion

- Manipulative behavioural patterns reached two to three days prior a scored tail biting outbreak their maximum.

- Victims of manipulative behaviour were less active than offenders.

![Graph showing connection between character and inactivity](image)
Conclusion

• Biting occurrence 2-3 weeks after weaning, tail losses 3-4 weeks after weaning

• The renunciation of mixing after weaning cannot prevent tail biting

• Housing of litter-wise groups can prevent superficial skin lesions in the first days after weaning

• “Real” tail biting outbreaks took place prior scored outbreaks

• Victims of manipulative behavioural patterns are less active than offenders
Thank you for your attention!

Any questions?

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