EFSA Scientific Opinion on tail biting in pigs and possible means to reduce the need for tail docking

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EFSA's Mission

Provide **scientific advice and scientific and technical support** for the Community’s legislation and policies in all fields which have a direct or indirect impact **on food and feed safety** including **animal health and welfare**

**AHAW Panel mandate**

The Animal Health and Welfare Panel deals with questions on all aspects of animal health and animal welfare, **primarily relating to food producing animals**, including fish.
Directive 2001/88 requires the Commission to submit to the Council a report, based on EFSA Scientific Opinions concerning various aspects of housing and husbandry systems for pigs (sows, boars & fatteners).

EFSA was requested to give scientific advice concerning the risks associated with Pig Tail Biting and possible means to reduce the need for tail docking considering the different housing and husbandry systems.
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- Welfare and health aspects of tail biting
- Current situation on tail docking (Legislation & Practices)
- Welfare and health consequences of tail docking
- Hazard identification for tail biting:
  - Animal Characteristics (Breed and Genetics, Gender, Weight or age)
  - Rearing (Early housing conditions, Weaning age)
  - Social environment (Group size, space allowance and stocking density, other aspects)
  - Herd Size
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1. Tail biting (TB) can cause very poor welfare: evidence indicates that TB pigs are likely to be frustrated.

2. TB is associated with a variety of pathological changes ranging from spinal abscesses to pyaemia, which may be associated with reduced growth rate or total carcass condemnation.

3. Tail docking (TD) is likely to be painful, both in the short and long term (possible neuroma formation).

4. TB is considered as an abnormal behaviour. The need to perform exploration and foraging behaviour is considered to be a major underlying motivation.
5. TB has a multi-factorial origin and some causal factors have more weight, such as the absence of straw, the presence of slatted floors and a barren environment. The amount and form of straw are also important. There is little evidence that provision of toys can reduce the risk of TB.

6. Heritability value of TB is high enough for selection. Phenotypic correlation between TB and higher lean tissue growth rate has been reported.

7. Potential TB hazards are: competition for feed, inadequate feed intake, inadequate dietary sodium, deficiency of dietary essential amino acids, and a sudden change in diet composition.
8. TB risk seems to be increased in autumn: main hazards are heat and cold stress and high airspeed.

9. Practical experience, among others, strongly suggest poor health status to be a hazard for tail biting.

10. The efficacy of TD to reduce the frequency of TB is very difficult to estimate due to the level of TB in control undocked pigs. Under common intensive farming conditions, TD reduces the frequency of TB, but does not completely eliminate the problem when unfavourable conditions persist.
1. To monitor pigs when husbandry is changing to possibly prevent TB outbreaks. The importance of good stockmanship is emphasized.

2. To address the major risk factors: (i) provision of straw, preferably as bedding, and (ii) proportion of slatted floors. When TB incidence increases, other factors affecting its likelihood (e.g. air speed, health status, high temperature) should be considered.

3. To implement measures other than TD, since TB can cause very poor welfare and TD is likely to be painful.
Research is recommended in the following fields:

1. TB Prevalence in docked and undocked populations.

2. Role of genetics, environment, husbandry practices, age and sex.

3. Understand the basic causes of TB. Define tools for early detection.

4. Address severity and duration, prevalence and extent of chronic pain from TD.

5. Effect of TD on TB under different housing and management systems.
Risk Assessment in Animal Welfare

Risk in AW: probability of a negative effect and the severity of that effect, consequential to the exposure to a hazard(s).

Hazards Identification

Hazards Characterisation

Exposure Assessment

Risk Characterisation

Identification of Major Risks for Animal Welfare
Risk and Magnitude for Docked Population

Risk Assessment Outcomes

Tail docking - chronic pain (Full)
Lack of straw/adequate enrichment (No particulate rooting substrate/distructable toy)
Lack of long straw (Full)
Lack of straw and 100% slatted floor (Full)
Genetic selection for high lean tissue growth rate (low fatness)
High stocking density (End point approximately 110kg/m²)

Absence of natural light (Full)
Presence (no removal) of tail bitten and tail biting animals (Full)
Abrupt change of feed composition (Full)
Mixing of animals excluding at weaning time (Full)
Lack of farrowing house bedding / enrichment (Full)
Tail docking - fear and acute pain (Full)
Heat stress (Above the upper critical temperature)
Delay of feed supply (More than 12h delay if adlib fed, or less in animals fed in meals)
Absence of straw and 100% slatted floor (Full)
Lack of long straw (Full)
Tail docking - infection with inflammation (Full)
Lack of straw/adequate enrichment (No particulate rooting substrate/distructable toy)
Tail docking - chronic pain (Full)
Poor herd health status (Presence of enzootic disease)
Castration in males (Full)
High feeding competition (More than 10% pigs waiting)
Genetic selection for high lean tissue growth rate (low fatness)
Inadequate dietary sodium (Less than 0.17% of the diet)
Poor air quality (low ventilation) (Above 25 ppm NH₃)
Lack of farrowing house bedding / enrichment (Full)
High air speed (draughts) (Above 0.5 m/s)
Large Herd size (More than 5000 growing pigs)
Poor air quality (low ventilation) (Above 25 ppm NH₃)
Being in a group with growth retarded pigs (1 pig 25% < average)
Presence of clinical disease in the individual (Full)
Cold stress (Below the lower critical temperature)
Aminoacid deficiency (Less than lean tissue growth requirements)
High stocking density (End point approximately 110kg/m²)

Magnitude

Risk estimate

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

0 2 4 6 8 10 12 14 16

Magnitude

Risk

12 16

9.99 → 20
Risk Assessment Outcomes

Risk and Magnitude for Undocked Population

Risk estimate

0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

Magnitude

- Lack of long straw (Full)
- Castration in males (Full)
- Genetic selection for high lean tissue growth rate (Low fatness)
- Absence of bedding having previously bedding since weaning (Full)
- Lack of straw and 100% slatted floor (Full)
- Presence - no removal - of tail bitten and tail biting animals (Full)
- High air speed - draughts (Above 0.5 m/s)
- Poor air quality - low ventilation (Above 25 ppm NH3)
- Cold stress (Below the lower critical temperature)
- Being in a group with growth retarded pigs (1 pig 25% < average)
- Heat stress (Above the upper critical temperature)
- Presence of clinical disease in the individual (Full)
- Lack of farrowing house bedding/enrichment (Full)
- Fully slatted floor during suckling period (Full)
- Absence of natural light (Full)
- Large herd size (More than 5000 growing pigs)
- Aminoacid deficiency (Less than lean tissue growth requirements)
- Inadequate dietary sodium (Less than 0.17% of the diet)

Legend:
- Magnitude
- Risk

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Acknowledgements

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For any additional info
Thanks for your attention!!