Scientific background from the EFSA scientific opinions on pig welfare for Directive 2008/120

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Risk Analysis: a process consisting of three components
risk assessment  risk communication  risk management
Risk assessment focuses on hazards
Make recommendations to reduce risk

Welfare assessment focuses on outcomes
Compares outcomes in different situations

Statement on the use of animal-based measures to assess the welfare of animals\(^1\)

EFSA Panel on Animal Health and Welfare (AHAW)^2, 3
## EFSA’s Scientific Opinions on Pig Welfare

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Recommendations and Animal Based Measures (ABM)

From the scientific opinion on: FATTENING PIGS

Pigs should be provided with such an environment and management that the negative consequences of poor welfare such as injurious behaviours, physiological problems and immunosuppression, caused in barren environments are avoided.

**ABM:**
- Mortality
- Skin lesions on-farm or at slaughter
- Tail lesions on-farm and at slaughter
- Ear lesions on-farm and at slaughter
- Tail-biting
- Ear-biting
- Flank-biting
- Disease signs on-farm
- Disease signs at slaughter
- Acute phase protein
- Social isolation
- Feeding and drinking behaviour
- Body condition score
  (Potentially all animal-based measures indicating adequacy of housing and management)

**NON ABM:**
- Records of veterinary treatment, euthanasia
- Space
- Temperature
- Airspeed
- Enrichment
- Diet
- Health management
- Feeder space
- Drinker provision
From the scientific opinion on: WEANINGS AND GROWER-FINISHER PIGS

Space allowances and floor quality should facilitate provision of adequate environmental enrichment (foraging material and material to explore), in order to reduce the risk of disturbed behaviour

**ABM:**
- Skin lesions
- Tail-biting
- Ear-biting
- Flank-biting
- Belly-nosing
- Persistent investigatory behaviour
- Exploratory behaviour
- Tail posture
- Tail lesions on-farm or at slaughter

**NON ABM:**
- Presence of substrate
- Amount and nature of substrate
- Space allowance
Recommendations and ABM

ENRICHMENT MATERIALS

From the scientific opinion on: FATTENING PIGS

• In order to provide for the need to root with the nose and manipulate destructible materials, each pig should have access to manipulable, destructible material, such as straw or other fibrous material.

• Since indestructible objects, such as chains or tyres, are not sufficient to provide for the manipulatory need of pigs, they may be used as a supplement to destructible and rooting materials but not as a substitute for them.

ABM:
Exploratory behaviour
Persistent investigatory behaviour
Tail-biting
Ear-biting
Flank-biting

NON ABM:
Nature of enrichment
Recommendations and ABM

ENRICHMENT MATERIALS

From the scientific opinion on:
WEANINGS AND GROWER-FINISHER PIGS

All pigs should have access to a sufficient quantity of material to avoid problems due to lack of investigation and manipulation activities.

From the scientific opinion on:
UPDATE ON FATTENING PIGS

Pigs should have enrichment, such as straw, starting early in life to reduce subsequent risk of aggression and tail biting.

ABM:
Exploratory behaviour
Skin lesions on-farm or at slaughter
Tail lesions on-farm and at slaughter
Ear lesions on-farm and at slaughter
Tail-biting
Ear-biting
Flank-biting
Aggression resulting in injury

NON ABM:
Amount of appropriate material available
Nature of enrichment in early life
From the scientific opinion on: FATTENING PIGS

Pen surfaces suitable for body rubbing and, wherever possible, wallows, should be provided for pigs for grooming purposes.

ABM: Skin inflammation and discolouration

NON ABM: Presence of rubbing surface Presence of wallow
From the scientific opinion on: TAIL BITING AND NEED FOR TAIL DOCKING

Tail biting has a multi-factorial origin and there is evidence that some causal factors have more weight, such as absence of straw, the presence of slatted floors and a barren environment.

**ABM:**

The use of ABMs to assess risk due to environmental adequacy would necessitate a full spectrum of measures regarding health, thermal comfort, social harmony, etc.

The risk could therefore be more simply assessed by a checklist of resource measures.

Decision Support Tool
Recommendations and ABM

From the scientific opinion on: TAIL BITING AND NEED FOR TAIL DOCKING

Those housing and management procedures that are found to prevent tail biting should be applied and, if tail biting occurs, such management interventions that prevent an escalation of the problem and the negative consequences of poor welfare in victim pigs should be applied. The importance of good stockmanship is emphasized.

ABM:
Tail lesions on-farm
(Potentially all animal-based measures indicating adequacy of housing and management)

NON ABM:
Space
Temperature
Airspeed
Enrichment
Diet
Health management
Feeder space
Drinker provision
Stockperson training records
[there are other resource-based measures]
Recommendations and ABM

From the scientific opinion on: TAIL BITING AND NEED FOR TAIL DOCKING

Since tail biting can cause very poor welfare and tail docking is likely to be painful, both in the short term and as a result of possible long-term pain from neuroma formation, measures other than tail-docking should be implemented to control tail-biting and its adverse effects.

ABM:
Docked tail
Tail lesions on-farm and at slaughter
Tail-biting
(Potentially all animal-based measures indicating adequacy of housing and management)

NON ABM:
Tail docking practice
Space
Temperature
Airspeed
Enrichment
Diet
Health management
Feeder space
Drinker provision
From the scientific opinion on: TAIL BITING AND NEED FOR TAIL DOCKING

To minimise the risk of tail-biting, it is recommended to address the following major risk factors: (i) provision of straw, preferably as bedding, and (ii) proportion of slatted floors in housing systems for fattening pigs. Due to the severe adverse effects for pigs of tail biting inducing poor welfare, when tail biting incidence increases in a farm, other factors which have also effect on the likelihood of tail biting (e.g. Air speed, health status, high temperatures) should be considered.

**ABM:**
- Tail lesions on-farm and at slaughter
- Tail-biting
- Exploratory behaviour
- Disease signs on-farm
- Disease signs at slaughter
- Acute phase protein
- Body condition score
- Panting
- Lying location, Lying posture
- Manure on the body score
- (Potentially all animal-based measures indicating adequacy of housing and management)

**NON ABM:**
- Type of floor (% slats)
- Presence of straw
- Quantity of straw
- Space
- Temperature
- Airspeed
- [there are other resource-based measures]
From the scientific opinion on: TAIL BITING AND NEED FOR TAIL DOCKING

An intact curly tail should be considered as an important animal-based welfare indicator for weaned, growing and finishing pigs on farm.

Monitoring at slaughter of lesions related to tail biting is suggested to identify herds with such problems as guidance for the implementation of preventive actions.

Monitoring at slaughter should include whether the tail is intact, tail length (in addition to tail lesions), as well as missing parts of the ears and biting wounds on flanks and legs.
Recommendations and ABM

From the scientific opinion on: TAIL BITING AND NEED FOR TAIL DOCKING

Decision support tools utilising the full range of information on how to reduce the risk of tail biting should be used to promote adoption of preventive measures

ABM: Potentially all animal-based measures indicating adequacy of housing and management

NON ABM:
- Type of floor (% slats)
- Space
- Temperature
- Airspeed
- Enrichment
- Diet
- Health management
- Feeder space
- Drinker provision
- Stockperson training records
- Evidence of using a decision support tool
  [there are other resource-based measures]
Overcrowding is a risk factor for poor welfare. For pigs of up to 110 kg, the min space allowance should be equivalent to \( k = 0.036 \), where ambient \( T^\circ \) is < 25 °C. If \( T^\circ > 25 \) °C, a space allowance equivalent to \( k = 0.047 \) should be used. For pigs of more than 110 kg, a space allowance equivalent to \( k = 0.047 \) should be used at all times.

**SPACE ALLOWANCE**

**From the scientific opinion on:**
**WEANINGS AND GROWER-FINISHER PIGS**

- Skin lesions
- Tail lesions
- Ear lesions
- Mortality rate
- Disease signs on-farm
- Disease signs at slaughter
- Panting
- Lying posture
- Lying location
- Manure on the body score
- Tail biting
- Ear biting
- Flank biting
- Aggression

**ABM:**

**NON ABM:**

- Space allowance
- Cleanliness of the pen

**space allowance \( (m^2) = k \text{ (constant)} \times W^{0.67} \text{ (body weight} \frac{2}{3}) \)**
Recommendations and ABM

FLOOR TYPES

From the scientific opinion on: WEANINGS AND GROWER-FINISHER PIGS

• Metal mesh floors should not be used for pigs because of their low slat to gap ratio. Also the cross-sectional profile of the solid part, causes higher levels of claw injury.

• Where slatted floors are used, in order to minimise the likelihood of a claw going into a gap, the width of a gap should not exceed half the width of the contact area between the foot and the floor and the solid area between the gaps should be sufficient to support the foot.

• In slatted (perforated) floors, the maximum percentage of the floor which is occupied by gaps should be 60 % of the usable floor area for an 8 kg weaner, 51 % for a 100 kg finisher and 40 % for heavier pigs.
Recommendations and ABM

ENVIROMENTAL TEMPERATURE

From the scientific opinion on: FATTENING PIGS

Where the ambient temperature around the pigs is above 19 ºC in pigs of over 50 kg and above 25 ºC in weaned pigs once established on solid feed, measures should be taken to facilitate heat loss in the pigs. This is best achieved by allowing the pigs to take action to cool themselves by visiting a wallow or other place where they can cool themselves, such as a cool floor, shower, or place of greater air flow. Above these temperatures, each pig should be able to lie so that it is not in contact with any other pigs.

ABM:
- Panting
- Body temperature
- Manure on the body score
- Lying location
- Lying posture

NON ABM:
- Environmental temperature
- Provision of cooling
- Space allowance
Recommendations and ABM

MIXING OF UNFAMILIAR ANIMALS

From the scientific opinion on:
WEANINGS AND GROWER-FINISHER PIGS

Mixing of unfamiliar pigs should be kept to a minimum, as they are likely to fight and will then have temporarily increased space requirements and an increased risk of diseases, floor-induced claw and limb lesions.

ABM:
- Skin lesions
- Locomotion score
- Aggression resulting in injury
- Foot lesions
- Coughing
- Sneezing
- Laboured breathing
- Twisted snouts
- Lung and respiratory tract pathologies
- Tear staining
- Acute phase protein

NON ABM:
- Frequency of mixing
- Level of ammonia, H2S, dust and total microbial count
- Records of treatments
Recommendations and ABM

CONTACT WITH HUMANS

From the scientific opinion on: FATTENING PIGS

Pigs should be exposed to appropriate human contact early in their lives so that later they are less fearful, and negative effects on their welfare during the handling of the animals are minimised and there are associated benefits for production.

ABM:
Approach to humans score

NON ABM:
Records of stockperson training
Production records
Thank you for your attention

Animal Welfare

Animal welfare is an important part of EFSA’s remit. The safety of the food chain is indirectly affected by the welfare of animals, particularly those farmed for food production, due to the close links between animal welfare, animal health and food-borne diseases. Stress factors and poor welfare can lead to increased susceptibility to disease among animals. This can pose risks to consumers, for example through common food-borne infections like Salmonella, Campylobacter and E.Coli.

The welfare of food producing animals depends largely on how they are managed by humans. A range of factors can impact on their welfare including housing and bedding, space and crowding, transport conditions, stunning and slaughter methods, castration of males and tail docking.

See also
- Panel on Animal Health and Welfare (AHAW)
- Panel on Biological Hazards (BIOHAZ)
- Animal Health homepage
- Cloning homepage
- Feed homepage