

# CUTTING THE NEED FOR TAIL-DOCKING

## Why are my pigs tail-biting?



**Tail-biting is a multi-factorial problem – there is no silver-bullet solution. Each farmer, where necessary in close collaboration with a veterinarian, should investigate six factors and find the solutions that work best for his or her farm.**

### Why should I care?

Tail-biting means lower carcass weight and condemned or trimmed carcasses. This, in turn, means economic losses for pig farmers. The factors listed in the side panel also influence the health of the animals. Addressing problems will therefore improve health, reduce antibiotic use and improve production. Tail-biting also compromises animal welfare and taints the pig farming industry's reputation.

### Where do I start?

Start by monitoring risk factors by keeping records on the six key factors and carefully observing the behaviour of your pigs. This will help you identify any problems before tail-biting becomes an issue, and address the underlying cause of any tail-biting on your farm.

You may wish to start by building a risk report using the online WebHAT tool (<https://webhat.ahdb.org.uk/>). You may also carry out a more in-depth risk assessment, for example using the SchwIP model (<https://www.fli.de/index.php?id=754&L=1>).

### When things go wrong

Even farms paying careful attention to all key factors will occasionally experience an outbreak of tail-biting. If this happens, follow these three steps:

1. remove the biter and treat injured pigs;

2. add fresh enrichment material such as rope, fresh wood, branches, straw (consider keeping a supply for emergencies);

3. check the key factors listed above and introduce improvement measures.

*It is very important to catch the problem early and to act immediately! Early signs include hanging/clamped tails, tail wagging, hairless tails, restlessness and bite marks.*

Tail-biting is a sign of stress. This stress is usually caused by inadequate environmental conditions and management practices with regard to one or more of the following six key factors.

### 1. ENRICHMENT MATERIAL

Pigs have a strong need to explore their environment and to search for food (sniffing, biting and chewing). If they cannot do this, they get bored and frustrated.

### 2. THERMAL COMFORT, AIR QUALITY AND LIGHT

Pigs need a stable environment that is close to their optimum temperature and humidity levels, draught-free and with suitable lighting conditions. If pigs are not comfortable, they become frustrated and may begin tail-biting.

### 3. HEALTH AND FITNESS

Good overall health is one of the best ways to avoid tail-biting. A pig in poor health is a stressed pig.

### 4. COMPETITION

Pigs prefer to forage, eat and rest simultaneously. There should be enough space and resources for the pigs to meet this behavioural need and thus avoid competition.

### 5. DIET

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**Optimising these key factors should reduce tail-biting and remove the need for tail-docking.**



*Heikkilä Farm, Finland*



*Fumagalli Farm, Italy*

The two farms pictured above feature in videos on avoiding the need for tail-docking. Videos and the factsheets are available on the European Commission's website: [https://ec.europa.eu/food/animals/welfare/practice/farm/pigs/tail-docking\\_en](https://ec.europa.eu/food/animals/welfare/practice/farm/pigs/tail-docking_en)

# 1 CUTTING THE NEED FOR TAIL-DOCKING ENRICHMENT MATERIAL

## Why are my pigs tail-biting?



*Straw and hay are popular choices for enrichment material*

### Potential indicators of ineffective or insufficient enrichment material, which could lead to tail-biting

- Bitten tails and ears
- Skin lesions
- Loss of interest in enrichment materials over time
- Biting pen fittings or other pigs instead of enrichment materials
- Rooting in and manipulating dung
- Competition or fighting for use of enrichment materials
- Belly-nosing.

**What?** There ARE enrichment materials that are compatible with slurry and slatted floor systems, such as long chopped straw, alfalfa and hemp rope. For the pigs, it is important to be able to change the material's location, appearance and structure; it should be chewable or edible, and pigs should be able to root in it. You can provide either one or several materials – the key point is that they meet these criteria and are positioned appropriately (at the right height, without interfering with resting or feeding, not too easily pulled from dispensers, and not easily contaminated with dung). Add additional materials to at-risk pens.

**Why?** Pigs have a strong need to explore their environment and look for food. They do this by rooting, sniffing, biting and chewing. If they cannot do this, they get bored and frustrated, and will start biting pen fittings or pen mates.

**When?** The material must be accessible to all pigs at all times. To keep the pigs interested, it must be replenished often enough to be of sustained interest, and it must be kept clean.

**How much does it cost?** Costs will vary according to the materials selected and local prices. One EU country rearing pigs with intact tails calculated in 2016 that the cost of using straw was equal to 0.25 % of costs in fattening farms, and from 2.8 % to 4 % of all costs in breeding units.

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**How do I know if I'm doing it right?** First and foremost, look at your pigs! Are they interested in the material you have provided, or are they manipulating other pigs or pen fittings instead? Are they competing for the material?

You can also use the following equation to quickly assess whether your pigs have access to sufficient and appropriate enrichment materials.



*Are your pigs interested in the enrichment material?*



*How much straw is enough straw?*

1. When the pigs are active but not eating, count the number of pigs exploring (manipulating, investigating, chewing) enrichment material. This figure corresponds to 'A'.
2. Count the number of pigs interacting with other pigs and pen fittings (do not include eating and drinking). This figure corresponds to 'B'.
3. Substitute the letters in this equation with your figures:  $A/A+B$ . So if you observe 20 pigs exploring the enrichment material, with an additional 10 pigs interacting with other pigs or fittings, your sum would be 20/30. Now multiply that answer by 100 to give you a percentage. In this case it would be 66.7 %. Compare your figure with those below to assess whether your pigs need additional enrichment materials.

100 % - 86.4 %	86.3 % - 18.1 %	18 % - 0 %
Maximum exploratory behaviour – no additional material required	Intermediate exploratory behaviour – no additional material required, although you may want to reconsider if your figure is close to the lower end	Minimal exploratory behaviour – introduction of enrichment materials recommended

**Are there any disadvantages?** Not if you pay attention to a few simple basics: if using straw, it must be dry to reduce the likelihood of mycotoxin contamination (take a sample to check for contamination) and stored properly. Humidity can cause material to swell, blocking dispensers. Straw and roughage can also be used in pens with slatted floors – countries rearing pigs with intact tails report that when using these materials, slurry blockages are rare. Be aware of the origin of the enrichment material to avoid introducing contagious diseases within the production system.

**Did you know?**

If a tail-biting outbreak occurs, it is important to immediately provide the pigs with a lot of distraction.

A mixture of different, interesting and manipulable materials can help. Try using some of the following: branches with leaves, ropes, wood chip, hay, straw, or other edible material. Some farmers keep a spare supply of emergency enrichment materials on their farm.

If using rope, try tying knots in it so that pigs cannot bite off long pieces that could end up in the slurry system.

**Sara Barbieri**  
 Researcher, Università degli Studi di Milano, Italy

*'We developed, in the framework of a national research project on pig production, a cost calculator for an economic evaluation of the use of materials other than straw. The result was that costs, even including maintenance and labour, are negligible.'*

# CUTTING THE NEED FOR TAIL-DOCKING THERMAL COMFORT, AIR QUALITY AND LIGHT

## Why are my pigs tail-biting?



*Pigs struggle to regulate their body temperature*

### Potential indicators of poor thermal comfort/air quality/lighting conditions, which could lead to tail-biting

- Lack of cleanliness
- Restlessness/aggression
- Huddling
- Shivering
- Playing with water and manure
- Reduced appetite
- Pigs laying on their sides and/or far apart
- Excretion in the rest area
- Panting, sneezing or coughing
- Conjunctivitis.

**What?** Maintaining the right temperature and good air quality are extremely important in keeping stress levels low. Different temperature zones are an even better option. In cold climates, insulation, good bedding or a heating system can ensure thermal comfort. During warm weather, options include ground heat exchangers, air conditioning, floor cooling, misting systems, showers and wallows. Ventilation must limit the flow of cold air over sleeping areas and keep dust and ammonia levels to a minimum. It is also important for pigs to be able to avoid direct sunlight. Pigs must be kept in light with an intensity of 40 lux for a minimum period of 8 hours a day. As continuous lighting causes stress, a day and night rhythm should be maintained. Very bright lights should be avoided.

**Why?** Pigs have a very limited capacity to regulate their body temperature, and therefore need a stable environment that is close to their optimum temperature at all times, and which limits non-seasonal fluctuations. Different temperature zones that cater for different pigs' needs work even better. If pigs are denied this, they become listless or restless and may begin tail-biting.

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**How?** Various heating, cooling and ventilation options are on the market. For direct sunlight, the solution could be as simple as fitting blinds on windows. Keeping pigs in semi-darkness to avoid attacks is ineffective and should be avoided.

**How much does it cost?** Costs vary according to country and the options selected.

**How do I know if I'm doing it right?** Various indicators have been proposed, such as ensuring temperature variation does not exceed 4°C over 24 hours, keeping draughts below 0.2 metres per second and monitoring CO<sub>2</sub>, NH<sub>3</sub> and humidity levels.

**Are there any disadvantages?** Not all ventilation and flooring system combinations are as effective as others. Experience from farmers in countries rearing pigs with intact tails shows that the best results have been achieved by incremental modifications to ventilation, heating and pig pen designs based upon trial and error.



Temperature control at Timo Heikkilä's farm, Finland

**Did you know?**

Some farms in the Nordic region are using the latent heat in slurry systems to heat the farm. This has the added benefit of cooling the slurry and reducing the production of ammonia.

**Jan Vugts**  
Senior Advisor, HKScan, Finland

*'What is most important is that the design of the pen, floor and climate system form an integrated system.'*

**Anne-Claire Berentsen**  
Scientific employee at the Animal Welfare Service of the Lower Saxony State Office of Consumer Protection and Food Safety, Germany

*'Especially for weaners, heated flooring in the lying (resting) area is not that expensive and has huge benefits because it allows for a warm, comfortable lying area and a cooler activity area. Therefore the temperature in the overall compartment can be lower, which generally means better ventilation and a lower level of less noxious gas. It also gives pigs the option to choose between two temperature zones.'*

## CUTTING THE NEED FOR TAIL-DOCKING

# HEALTH AND FITNESS

### Why are my pigs tail-biting?



*Your veterinarian should be a regular visitor to the farm*

### Potential indicators of poor health that could lead to tail-biting

- Bitten or limp tail
- Skin lesions or scratches
- Increased restlessness
- Lameness
- Lack of appetite
- Panting, shivering, coughing, sneezing, diarrhoea
- Abnormal body size
- Social isolation
- Increased mortality.

**What?** A good herd health-plan and regular visits of your veterinarian are important for maintaining the overall health of your pigs and avoiding clinical outbreaks of diseases on your farm.

**Why?** Good overall health is one of the best ways to avoid tail-biting, and is of course also good for farm business.

**How?** Weaning your pigs at a minimum age of 28 days will produce stronger, more resilient and less stressed pigs. They will be less likely to tail bite, and fewer antibiotics will be needed later. Pigs should preferably be born, reared and fattened in closed herds. If this is not possible, fattening farms should only house pigs from one farm, and there should be close relations between farms so that health monitoring, hygiene regime and vaccinations can be coordinated. Ensure regular visits from a veterinarian and install hygienic barriers in all buildings. Mixing between groups should be avoided. An adequate number of hospital pens must also be provided. Keep a close eye on pens with health problems, as tail-biting is a real risk.

**How much does it cost?** Costs are outweighed by the benefits. Improving general health results in better production and reduces the use of antibiotics. Pigs with intact tails are stronger and healthier so are less likely to need veterinary or medical treatment, or specialised feed. They also experience fewer problems at weaning.

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**How do I know if I'm doing it right?** Generally, skin condition as well as tail posture and activity levels are key indicators of good health. More specific indicators can be used to keep an eye on herd health, including medicine usage, the number of pigs in hospital pens, mortality levels of less than 5 % post weaning, lameness levels of less than 5 %, and slaughterhouse and production feedback.

**Are there any disadvantages?** No – the costs of a robust health plan are by far outweighed by the benefits.

**Did you know?**

EU countries rearing pigs with intact tails also have some of the best pig health standards in the world. Is this a coincidence?





## CUTTING THE NEED FOR TAIL-DOCKING

# COMPETITION

### Why are my pigs tail-biting?



*Do your pigs have enough space to all eat simultaneously?*

### Potential indicators of a lack of space, which could lead to tail-biting

- Low body condition scores
- Variability in body size within a pen
- Skin lesions on hind quarters (food competition)
- Skin lesions on forequarters (space competition)
- Fights around feeders
- Pigs waiting to use feeders
- Poor distribution of pigs in each area of the pen.

**What?** You need to ensure sufficient space in each pen to avoid competition for food, drink or space. Feeding systems that allow all pigs to eat simultaneously are recommended. Ad libitum systems may pose a risk for tail-biting as they often fail to provide access to feed for all pigs at the same time. If such systems are used, be sure to avoid competition for food. Pen structure is also very important and space allowances should enable pigs to maintain separate resting and activity areas, while offering pigs opportunities to escape from their pen-mates.

**Why?** Competition is a stress factor that can lead to tail-biting. Research has shown that pigs use subtle body language to avoid fights; if they do not have the space to avoid confrontation, they become stressed. Providing sufficient space also influences other parameters, such as ability to rest, and air quality.

**How?** In addition to ensuring pens and feeders are adequate in size, it is important to keep pigs of a similar size together so as to minimise competition-induced stress. Sorting by size should be done at the time of weaning, although mixing should be minimised. Keep litter mates together as much as possible, and consider moving just very small piglets to a pen with extra facilities. A few simple changes can also provide access to escape routes, such as steps to a higher level platform in the pen.

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**How much does it cost?** If you need to increase feeding trough space, this will obviously decrease the floor space of the pen overall, meaning that you may need to reduce very slightly the number of pigs in the pen. But for those countries that have made this change, the costs are considered worthwhile.

**How do I know if I'm doing it right?** Good skin condition is evidence of sufficient space, as are a lack of fighting and waiting in the feed area. If all pigs may feed in one part of the pen, or all lie down simultaneously in another, you probably have no

problem with competition. There is no EU legal requirement for trough length. However, one country rearing pigs with intact tails recommends that trough lengths of roughly 17 cm/piglet, rising to 22 cm/fattener pig are effective in eliminating feeding competition.

**Are there any disadvantages?** Other than investing in larger troughs or reducing the number of pigs in a confined space, there should not be any costs to ensuring there is no competition.



Eliminating feeding competition was cited by farmers in EU countries rearing pigs with intact tails as one of the two most important factors to get right; the other was feed and water quality.



## CUTTING THE NEED FOR TAIL-DOCKING DIET

### Why are my pigs tail-biting?



*Water quality should be tested regularly*

#### Potential indicators of an unsuitable diet, which could lead to tail-biting

- Low body condition score
- Variation in weight
- Poor carcass classification
- High incidence of stomach and intestinal ulcers
- High incidence of tail or ear necrosis.

**What?** Your pig needs a feed with adequate levels of fibre (at least 4 %), minerals and essential amino acids (e.g. tryptophan and lysine). Feed should also be of adequate consistency for the type of animal, and of good quality. It should be given at suitable frequencies, and should not be changed abruptly. Plentiful supplies of good-quality fresh water are also important.

**Why?** A correctly balanced feed will keep your pigs healthy and ensure good gut condition. Pigs with sore guts and those that have to adapt suddenly to new feed become stressed pigs, and may turn to tail-biting.

**How?** Some farms find that pigs on a liquid diet grow more evenly and also convert food more efficiently than those on a dry diet. Some veterinarians have found that adding salt to feed or providing salt licks or mineral blocks are effective in addressing tail-biting. Both fibre content and grinding rate of feed are very important for intestinal health, and therefore a key factor in reducing tail-biting. Keep samples from every feed batch and store them for around two months – you may analyse them if tail-biting occurs.

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On providing water, one EU country recommends to have 1 drinker for every 12 pigs. Water quality should be tested regularly using chemical and microbiological analysis. Flow rates and the functioning of drinkers should be checked at regular intervals and adjusted to the weight of the pigs in line with recommendations from pig health professionals <sup>(1)</sup>.

**How much does it cost?** While good formulations will often cost more, these costs are repaid post-slaughter because the pigs are healthy.

**How do I know if I'm doing it right?** If body condition scores are high and your pigs' gastric function is normal, you probably do not have a problem with diet. Nevertheless, if you haven't already, try comparing the nutritional content of your feed with that recommended by pig health professionals and your national pig health association. Liaise with your slaughterhouse about *post-mortem* indicators of gut health and talk to your feed company and veterinarian if you have a problem.

**Are there any disadvantages?** There are no disadvantages to providing a healthy and nutritious diet, except perhaps for the higher upfront cost. Good intestinal health means fewer cases of diarrhoea, healthier pigs, higher daily gain, better feed conversion and less use of antibiotics.



Improving the quality of feed and water was said by farmers in EU countries rearing pigs with intact tails to be one of the two most important parameters to get right; the other was eliminating feeding competition.

**Did you know?**

High raw fibre content can calm pigs down as it leaves them feeling full for longer.

There is scientific evidence that a lack of tryptophan in the diet increases the risk of tail-biting. In Germany it is recommended to have a lysine-to-tryptophan ratio of 1:0.2 for fattening pigs (28-110 kg).



*Nutritional content and consistency are both very important in a pig's diet*

<sup>(1)</sup> Recommended flow rates: suckling piglets: 0.4-0.5 l/min; weaners (7-30 kg): 0.5-0.7 l/min; fatteners <50 kg: 0.6-1.0 l/min; fatteners 50-80 kg: 0.8-1.2 l/min; fatteners 80-120 kg: 1.2-1.8 l/min (DLG Merkblatt 351).

## CUTTING THE NEED FOR TAIL-DOCKING PEN STRUCTURE/CLEANLINESS

### Why are my pigs tail-biting?



Copyright: Jens van Bebber

*Pigs are naturally very clean animals*

### Potential indicators of an unsuitable pen structure/lack of cleanliness, which could lead to tail-biting

- Presence of manure on the pigs' bodies
- Increased disease (lameness, diarrhoea, respiratory infections).

**What?** A dirty environment reduces the comfort of a living area and increases levels of noxious gases, stressing the pigs and increasing the risk of disease. When pigs are dirty, it is often due to inappropriate behaviour arising from unsuitable conditions on the farm, such as overcrowding, thermal stress or bad ventilation. Pigs also find dirty enrichment material uninteresting, so the resources invested in providing it are wasted.

**Where?** It is important to have well-defined areas for resting, feeding and dunging, particularly in pens with partially slatted floors. The resting area must be dry and clean, as should the food trough, water dispensers and any enrichment materials. Heavy pigs (slaughtered at around 160 kg) require additional space at the trough if they are being restricted-fed.

**How?** In addition to regular cleaning, look for the causes of any dirtiness. Experiment with temperature and ventilation, fix any faulty drinkers, investigate fittings and pen layout, observe where the pigs defecate and why. This should give an indication of where changes are needed. You may want to consider heated floors in the resting area, cooling systems or a biological air cleaning system, which removes dust, ammonia and odours from the air.

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**How much does it cost?** Cleaning costs are far outweighed by the benefits. It may well be more cost-efficient to experiment with pen design rather than cleaning badly designed pens more often.

**How do I know if I'm doing it right?** If the resting area is clean and dry, you are on the right track! You may also want to measure ammonia levels, or introduce a cleanliness scoring scale and monitor the proportion of pigs above a threshold score.

**Are there any disadvantages?** No.

### Did you know?

Some countries use feeders which fold up against the walls, meaning less wastage and feed contamination, and cleaner pigs!



*Pigs need a clean and dry resting area*