Quantifying and Understanding Tail Biting in Pigs

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Complying with EU legislation on tail docking is made difficult because of the intractability of tail biting in pigs, according to Laura Boyle of Teagasc.

Tail biting is an aberrant behaviour performed by pigs and strongly linked to intensive production methods. The behaviour consists of two stages: stage 1 involves a pig manipulating another pig’s tail in its mouth, often with little or no reaction from the recipient; and, stage 2 is the often frenzied cannibalism of the tail. While stage 1 is common under intensive conditions, the behaviour only progresses to stage 2 sporadically. Risk factors include tail length, stocking density, diet, ventilation, complexity of the housing environment and health status. This multifactorial aetiology makes tail biting an intractable problem, which causes pain and poor welfare for thousands of pigs and considerable distress for the people looking after them. Additionally, tail biting is often associated with infection, leading to abscesses on the spine and, ultimately, the condemnation of carcasses at slaughter, which has significant economic implications.

Tail Docking
Tail docking (removal of a portion or all of the pig’s tail, usually within a few days of birth) is widespread in the EU (European Food Safety Authority, 2007) and has traditionally been used to reduce the potential for tail biting. However, docking is not a panacea and if circumstances are stressful enough (e.g. blocked feeder or drinker in an overcrowded pen), pigs may still bite docked tails or else resort to biting the flanks or ears. Thus, docking does not address the causes of tail biting, only the symptoms. As pigs are rarely anaesthetised for this procedure it is also an issue for pig welfare.

Complaints to the EU
A recent report on tail biting concluded that improvements to the pig’s environment, e.g. provision of substrates such as straw, can reduce the risk of tail biting (European Food Safety Authority, 2007). Tail docking is regulated under the European Communities (Welfare of Farmed Animals) Regulations 2010, which was brought into Irish law under Statutory Instrument 311 in 2010. Thus, routine tail docking is no longer permitted, and ‘other measures shall be taken to prevent tail biting and other vices taking into account environment and stocking densities’. If these measures fail and there is evidence that injuries to other pigs’ tails have occurred, then non-routine docking is permissible. In July 2009, Compassion in World Farming lodged a formal complaint with the European Commission in light of Ireland’s failure to ensure that routine tail docking is not carried out. However, in the case of tail biting, the welfare and ethical concerns associated with docking are arguably less of a problem for the pig than tail biting is later in life.
Factory Survey
The Teagasc authors measured the actual extent of tail docking in Ireland and the prevalence of tail biting in pigs with tails of different lengths. Six abattoirs (in both Northern Ireland and the Republic of Ireland) were visited for three consecutive days each during summer 2010. The herd identification number (i.e., ‘slap’ number), sex, tail length (long or docked) and tail injury score of all the pigs killed in each factory on those days was recorded. The scale used to score the severity of tail biting was as follows: 0 – no evidence of tail biting; 1 – healed or mild lesions; 2 – evidence of chewing or puncture wounds, but no evidence of swelling; 3 – evidence of chewing or puncture wounds with swelling and signs of possible infection; and, 4 – partial or total loss of the tail with signs of severe infection. Inspections were conducted after the pigs came out of the scalding tank and prior to de-hairing.

High Levels of Tail-Directed Behaviour in Slaughter Pigs
Of the 36,963 pig carcasses inspected, less than half (41.2 per cent) had normal (score 0) tails. The remaining 58.6 per cent were broken down as follows: 52.5 per cent (score 1), 5.1 per cent (score 2), 0.62 per cent (score 3) and 0.43 per cent (score 4). These figures reflect an alarmingly high level of tail-directed behaviour in slaughter pigs. Admittedly, most tails received the relatively mild score of 1, which probably reflects superficial damage caused by stage 1 tail-biting. Arguably, scores of 1 could also be attributed to the washing (scalding) procedure post mortem. However, the fact that male pigs had a higher proportion of score 1, 2, 3 and 4 tails than female pigs suggests that score 1 tails were not mechanically induced. This also supports the theory that males are more susceptible to being bitten. There is no disputing the aetiology of scores of 2, 3 and 4, and the fact that six per cent of carcasses were affected by these severe injuries is of serious concern.

Does Docking Work?
Almost all pigs had docked tails (99.1 per cent). Although only 347 carcasses had undocked tails, a higher proportion of these received scores of 1 (59.9 per cent versus 52.4 per cent; p<0.01) and scores greater than 1 (29.9 per cent vs. 5.97 per cent; p<0.001) compared to docked carcasses. This indicates that tail docking prevents tail biting to some extent and lends support to producers’ reluctance to abandon the practice. Producers cannot, however, afford to be complacent, and the high number of docked animals affected by tail injuries suggests that there is a lot of room for improvement in housing and husbandry practices.
Experience with Undocked Pigs at Moorepark
In a trial at Moorepark (224 undocked pigs in 16 pens), there was a persistently high level of tail-directed behaviour (around 1.2 incidences per pig per hour or 16.8 incidences per pen per hour) and there were at least 12 acute outbreaks of stage 2 tail biting over nine weeks. These resulted in 35 per cent of the pigs suffering some degree of tail amputation by the time they reached 60kg liveweight. This was in spite of excellent housing conditions, a strict intervention protocol (removal of the biting pig(s) and treatment of tail injuries) and the provision of ‘toys’ and chains to go some way towards meeting the environmental enrichment requirements of the pig. The experience suggests that under existing housing and husbandry conditions, tail biting could become more prevalent if tail docking is abandoned.

Casualty Pigs
The tails of pigs from the Moorepark trial were also inspected for damage at the factory after slaughter at approximately 100kg. In spite of the high level of tail biting earlier in the production cycle, none received scores higher than 2, and there were no carcass condemnations for abscessation. In contrast, 161 pigs inspected (0.43 per cent) in the factory survey received a score of 4. For injuries to become this severe, it is unlikely that the affected pigs had been isolated from the biter(s) and/or received any treatment. Such serious tail damage is entirely avoidable, as demonstrated by the Moorepark study. Even more worryingly, although scores of 4 were only detected in 0.43 per cent of pigs, they were
spread across 34 per cent of the 231 farms sampled. Pigs with such severe injuries should not knowingly be presented for slaughter as they represent a threat to food safety and in any case, they are likely to be condemned for abscesses. Furthermore, transportation of such animals is likely to cause additional suffering. These pigs should be considered as casualty animals and euthanised on farm.

Future Research
Given that routine tail docking is now prohibited by law, more effort needs to be made to prevent the causes of tail biting. Although challenging under current production practices, there is great potential for improvement of the pigs’ environment. Additional changes in the way in which condemnations are communicated to producers could play a huge role in improving the on-farm treatment of badly bitten pigs, i.e. indicate that carcasses that were condemned were also tail-bitten. Further work in this area will develop the issue of carcass condemnation as a welfare outcome for pigs, determine the costs of carcass condemnation arising from tail biting, and examine the implications of tail-directed behaviour for meat quality.

Reference

Weaning at 28 Days: Is Creep Feeding Beneficial?
The Pig Site, January 9, 2012

Allowing piglets access to a Phase 1 diet (creep feed) in the farrowing room for the final seven days prior to weaning on day 28 provided no sustained performance benefit, regardless of weaning weight, according to Dr Denise Beaulieu, Janice Shea and Doug Gillis of Prairie Swine Center in the organisation’s latest newsletter.

Introduction
Providing supplemental feed to the piglets in the farrowing room, or creep feeding, is practised to ensure a smooth transition onto solid feed at weaning. It is assumed that even a limited intake of the creep feed will familiarise the piglet with solid feed and lessen a post-weaning growth lag by 1) increasing the body weight of piglets at weaning, 2) encouraging consumption of solid feed following weaning and, 3) adapting the gastro-intestinal tract to solid feed.

This study was initiated when the Prairie Swine Centre moved to a later weaning age (28 days). The researchers hypothesised that the benefits of creep feeding