Associations between damaging behaviour, associated lesions and enrichment type in finisher pigs on commercial farms

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Damaging behaviour

Definition: Behaviours that cause damage in the victim (exc. self-damaging behaviour)

Tail
Ear
Flank
Leg, penis & other biting





Schrøder-Petersen and Simonsen, 2001; Smulders et al., 2008; Brunberg et al., 2011; Spoolder et al., 2011; Weiler et al., 2016

Environmental enrichment

- EC Directive 2001/93 requires that all pigs have access to **proper investigation and manipulation materials**
  - straw, hay, wood, sawdust, mushroom compost, peat (or a mix)
- 'ingestible', 'odorous', 'chewable', 'deformable' and 'destructible'
- EU Staff Working document (2016): optimal, sub-optimal, marginal
- Practicality, availability issues
- In practice environmental enrichment not provided or is unsuitable/inadequate

Van de Weerd et al., 2003; Bracke et al., 2013; Bracke and Koene, 2019; Van de Weerd and Ison, 2019; Nalon and Briyne, 2019

Environmental enrichment & damaging behaviour

- Environmental enrichment
  - ↑ explorative behaviour
  - ↓ damaging behaviour
- Tail biting under experimental conditions
- Effects of environmental enrichment on damaging behaviour on commercial farms with slatted flooring?

Van de Weerd et al., 2003; Tuyttens, 2005, Bracke et al., 2006; EFSA, 2007; Smulders et al., 2008; Averos et al., 2010, 2016; Meer et al., 2017

Aim

To investigate associations between damaging behaviour and the associated lesions, and the enrichment type provided to finisher pigs on commercial farms

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Materials and methods

- Cross-sectional welfare assessment of 31 farrow-to-finish pig farms *(van Staaveren et al., 2017, 2018)*
- Farms visited once in 2015
- 6 pens of finisher pigs/farm (p sampling)
- Pigs observed for 10 min by 1st observer
  - No. pigs and no. affected by lesions (mild and severe tail, ear and flank lesions)
  - Type and no. of accessible objects/pen
- All occurrences of tail-, ear-, and flank-directed behaviour (5 min by a 2nd observer)

Kritas and Morrison, 2007; Smulders et al., 2008; Harley et al., 2012

Materials and methods

- Enrichment type classified as
  1. Chain (metal chains)
  2. Plastic (plastic, PVC, rubber objects)
  3. Wood (planks of timber, wood at the end of chains)
  4. Rope (natural fibre/artificial ropes of varying length)

- Determined main type/farm (n=29)

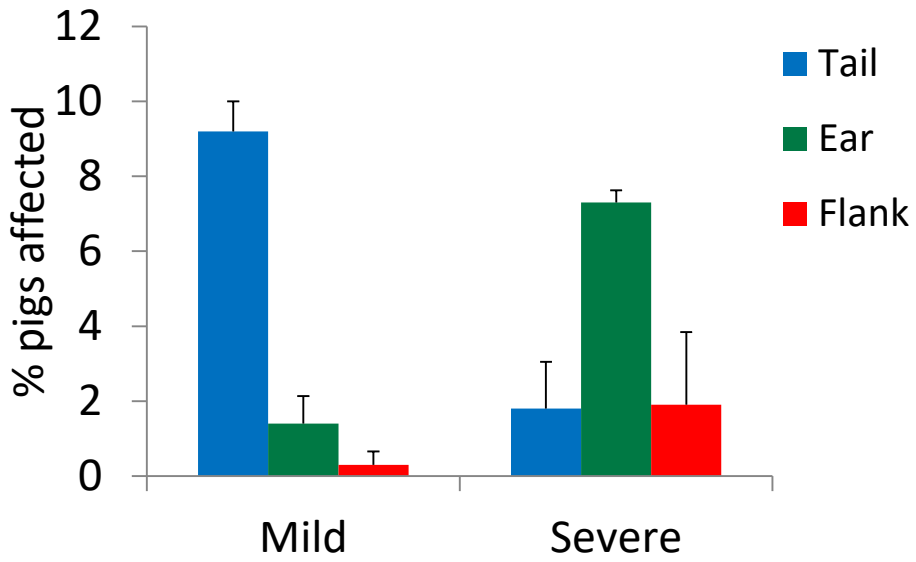
Results

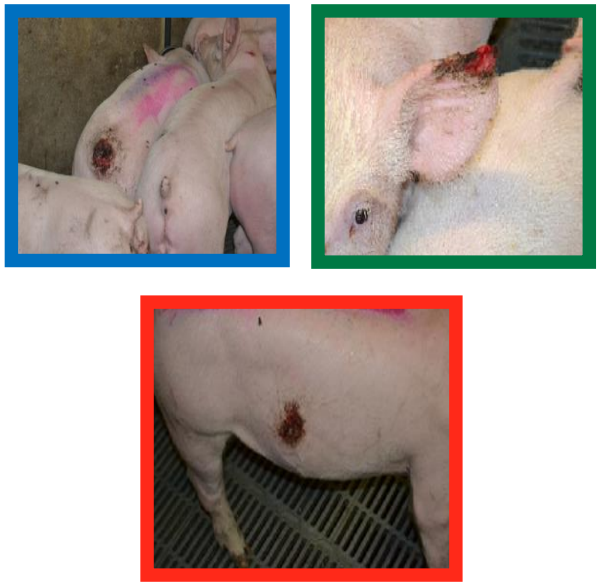
Results

Variable	Chain	Plastic	Wood
No. farms	12	11	6

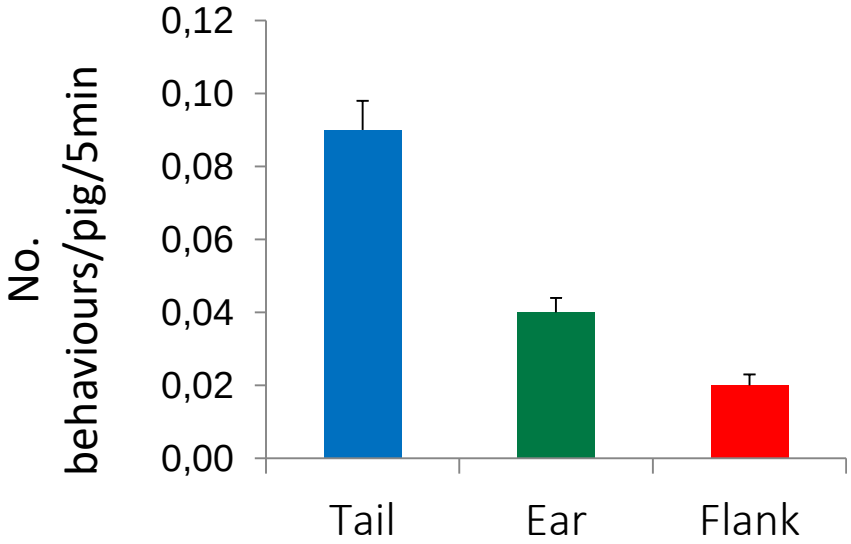
[a,b] P<0.05

Prevalence of tail, ear and flank lesions





Frequency of tail, ear and flank damaging behaviour



Correlations between damaging behaviour and associated tail, ear and flank lesions

Lesion	Mild	Severe
Tail	+0.51**	ns
Ear	ns	+0.41*
Flank	ns	ns

* P<0.05 **P<0.01 ns: Non-significant

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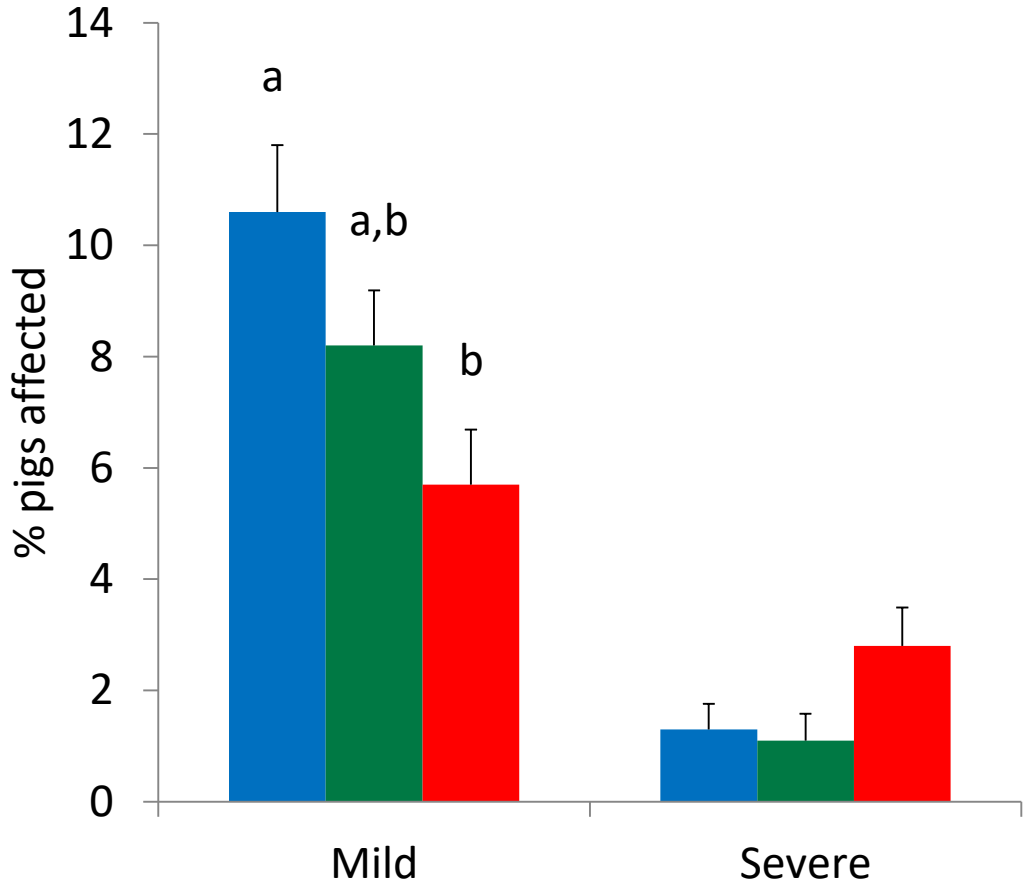
Effect of environmental enrichment type on tail lesions in finisher pigs



[a,b] P<0.05

No effect on ear or flank lesions (P>0.05)

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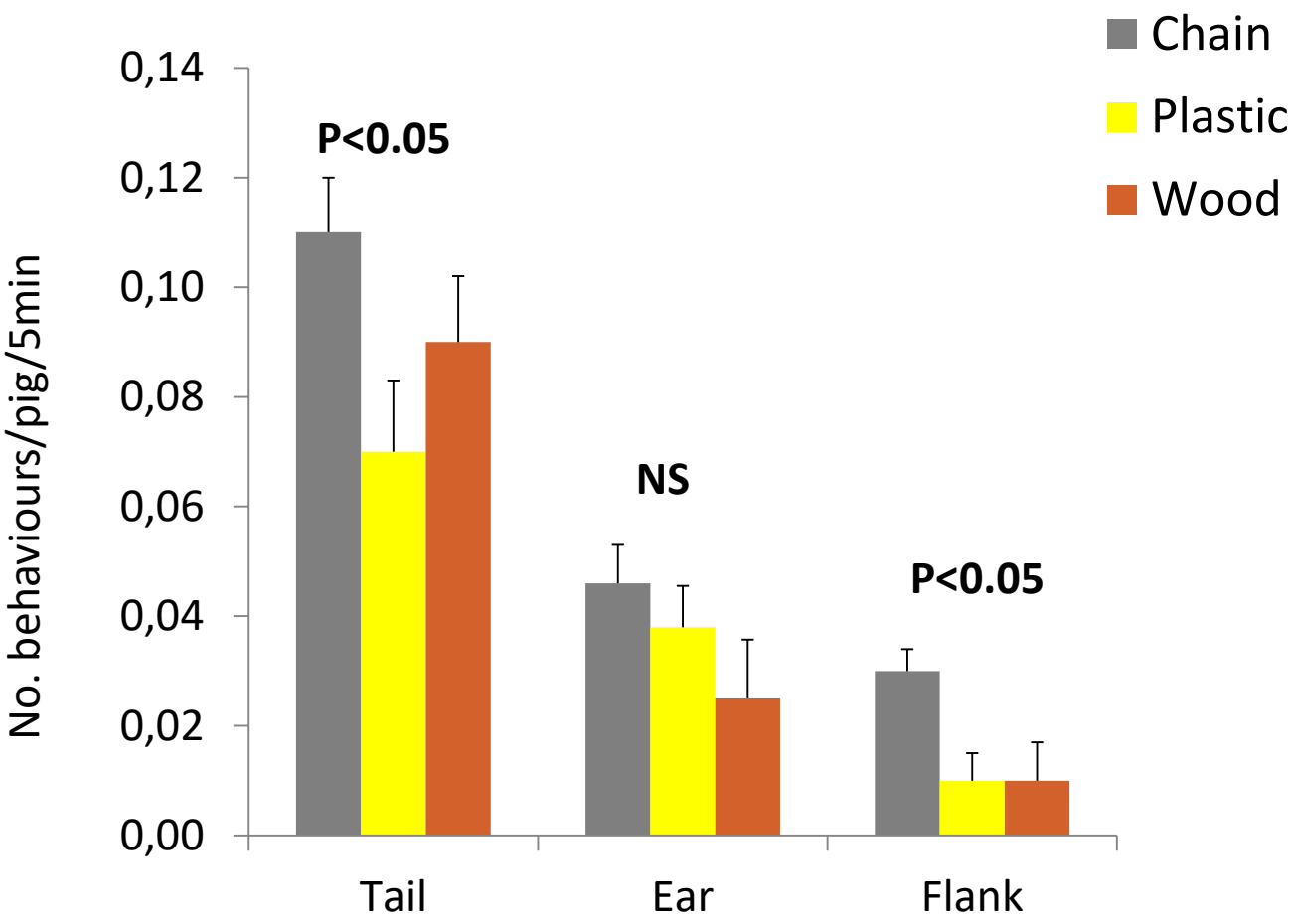
Tail, ear and flank damaging behaviour on farms that provided chains, plastic or wood



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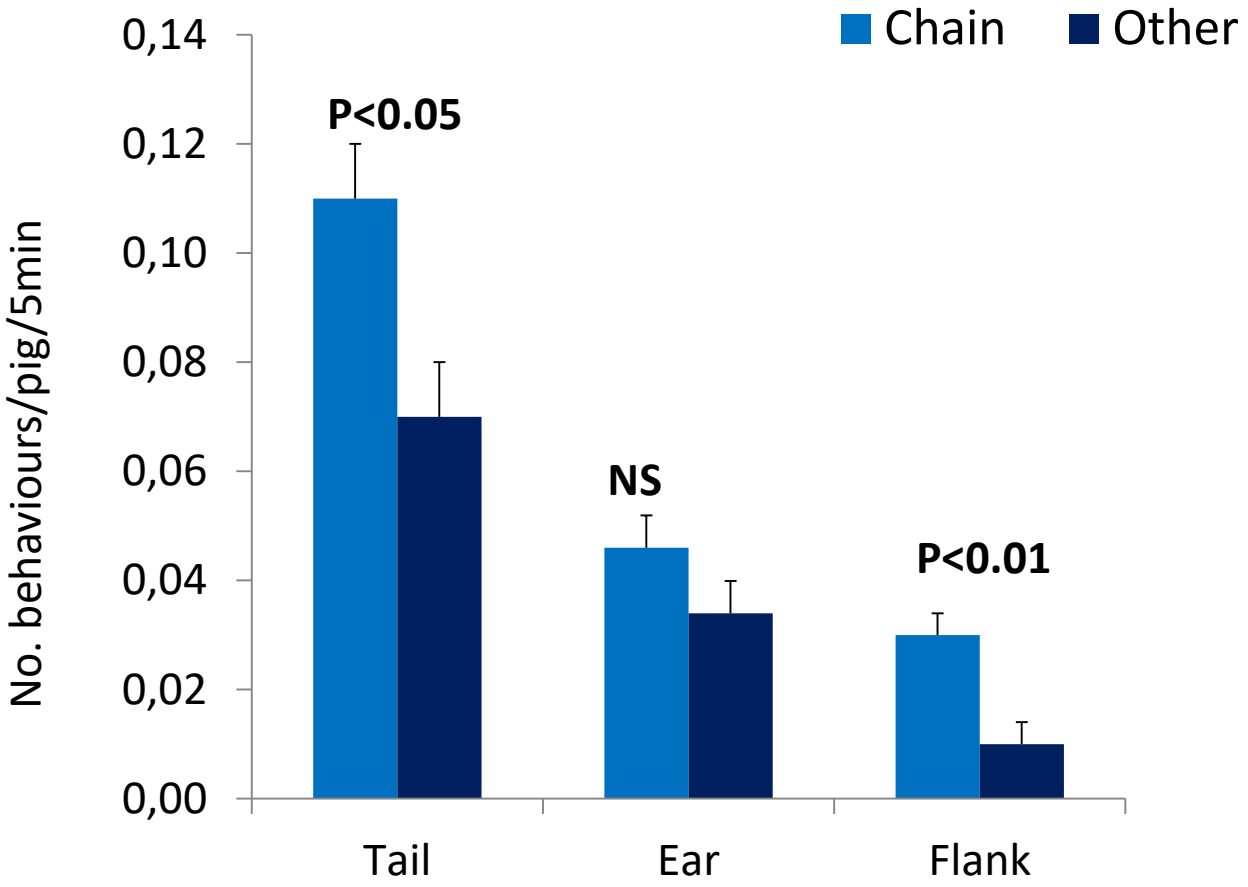
Tail, ear and flank damaging behaviour on farms that provided chains vs. other enrichment



No effect of no. enrichment devices/pen on damaging behaviour (P>0.05)

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Main findings

- Use of sub-optimal point-source objects as enrichment on Irish commercial pig farms
- High prevalence of lesions and damaging behaviours
- Correlation between tail and ear damaging behaviour and associated lesions
- ↑ mild tail lesions on farms with chains compared to wood
- No effect on severe tail lesions
- Tail and flank damaging behaviour more frequent on farms that provided chains versus other enrichment

Conclusion

Higher frequencies of tail- and flank-directed behaviour, and higher prevalence of mild tail lesions on farms where chains were provided confirming their limited usefulness

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