Changes in tail posture can predict tail biting outbreaks at the pen level

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Background - Tail biting in pigs

A challenge for many years (Van Putten 1969, Schrøder-Petersen and Simonsen 2001)

- A sign of stress and the origin is multifactorial
  - Stressors: lack of enrichment, poor health, stocking density, sub-optimal climate or feeding (D’Eath et al 2014)
- Occurs in many different production systems
- Difficult to predict – occurs sporadic and is short lasting (D’Eath et al 2014)
  - Quick escalation into actual tail biting outbreaks
Different areas of research to solve a complex problem

(D'Eath et al 2014)
Another approach

- Can behavioural changes be identified prior to an outbreak?
  - Changes in tail posture at the individual level (Zonderland et al 2009, Ursinus et al 2014)
  - Changes in activity (Statham et al 2009, Zonderland et al 2011)
  - Changes in exploratory behaviour (Ursinus et al 2014)
  - Altered eating behaviour (Wallenbeck & Keeling 2013)
Study design

Pen level recordings in 56 pens with weaners (7-30 kg)

28-32 pigs per pen

Enrichment

Tail biting outbreak → 4 pigs with a tail wound
Data collection principle

Weaning &

Tail biting outbreak (day 0)

Min. 4 pigs

30 kg
Video, behavioural recordings

In total **50 pairs of pens**
Recordings and data analysis

No. pigs in the pen
• Active pigs (standing, walking or sitting)
  • Tail posture (hanging/ tucked or curly)

Data was analysed using General Linear Mixed model
• Outcome: Prevalence at the pen level
• Fixed effects: Group, time a day, days before outbreak & days post wean
• Random effect: Pairs of pen
Tail posture - video observation

Tails down, %

Day -3  Day -2  Day -1

- Controls
- Tail biting pen

a - b: P < 0.001
*** : P < 0.001
Tail posture - direct observation

Recorded from outside the pen three times weekly (before tail scoring)

![Graph showing tail posture data over days before outbreak]
Words worth spreading

Hanging tails → check the tail end
React immediately, it makes a difference