

Foot lesions and abnormal posture in lactating sows in England: prevalence and association with floor type

A.L. KilBride, C.E. Gillman, L.E. Green. Department of Biological Sciences, University of Warwick, Coventry, CV4 7AL

E-Mail: a.kilbride@warwick.ac.uk



Aims

- Estimate the prevalence of foot lesions and abnormal posture in lactating sows in England
- Calculate the flooring risks associated with foot lesions and abnormal posture
- Determine if abnormal posture is associated with the presence of foot lesions

Method

Sample of farms

- Cross sectional study 2003 – 2004
- Selection criteria: herds with more than 100 sows
- Farmers randomly selected from Assured British Pigs database
- 18% agreed to participate

Data analysis

- Multilevel data structure with sows clustered within farms
- Binomial logistic regression models built for each outcome

Data collected on farm visits

- Pigs** – sample of 225 lactating sows from 70 farms
- Hind left foot examined
- Standing posture assessed
- Lactation floor type**
- Solid concrete with bedding
- Partly slatted
- Fully slatted
- Gestation floor type**
- Solid concrete with bedding
- Partly or fully slatted

Figure 1. Parts of the hoof

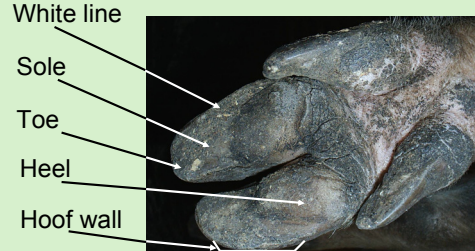
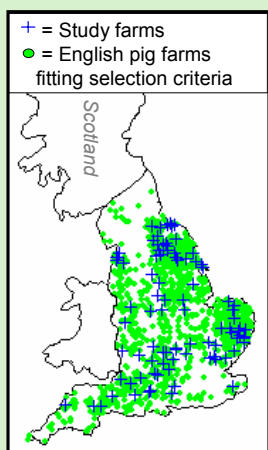


Table 1. Lesion classifications

Name		Description
Foot lesions	Toe erosion	Loss of horny tissue at the toe
	Heel erosion	Loss of horny tissue from the heel bulb
	Heel flap	Peeling of the superficial layer of heel
	Overgrowth	One or both hooves overgrown
	Wall lesion	Crack, penetration or bruise to the wall
Posture	White line lesion	Crack or separation in the laminae separating the wall from the sole
	Even posture	Stands squarely on all four legs
	Uneven posture	Does not bear weight evenly on all four legs

Results

Figure 2. Location of study farms



Prevalence

Prevalence of foot lesions: 73.1%
Prevalence of abnormal posture: 10.8%

Table 2. Prevalence of individual foot lesions

Lesion type	Affected pigs	
	Number	%
Toe erosion	50	22.2
Heel erosion	88	39.1
Heel flap	48	21.3
Overgrown	36	16.0
Wall lesion	22	9.8
White line lesion	11	4.9

Associations between floor type, foot lesions and abnormal posture

Lactation floor type

-No association

Gestation floor type

- Slatted floors increased the risk of uneven posture and heel flaps
- Solid floors increased the risk of toe erosion

Foot lesions and abnormal posture

-Presence of any type of foot lesion increased the risk of abnormal posture



Discussion

Prevalence – This study is the first to provide an estimate of prevalence of foot lesions and abnormal posture for lactating sows from a large cross section of representative commercial pig farms in England.

Floor type - The prevalence of foot lesions and abnormal posture was associated with the floor the sows had been housed on during gestation. It is likely that slatted floors increased the risk of heel flaps and abnormal posture because of the presence of voids and the lack of bedding. Solid concrete floors with deep bedding may be associated with an increased risk of toe erosion because the toe becomes overgrown in a very soft environment and is then at risk of erosion when the sow is moved into the farrowing crate.

Foot lesions and abnormal posture – The association between foot lesions and abnormal posture may be an indication that some foot lesions are associated with discomfort. Reducing the prevalence of foot lesions could be important to reduce the large proportion of sows prematurely culled due to locomotion problems.

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