# Risk factors associated with foot lesions in growing pigs

CE Gillman, AL KilBride, LE Green

Ecology & Epidemiology Group, Biological Sciences, University of Warwick, Coventry, CV4 7AL e-mail: c.gillman@warwick.ac.uk

## Project Aims:

•Assess the health and welfare of pigs on all commonly used floor types in the UK

•Investigate the impact of forthcoming EU directives on slat and slot sizes of concrete floors

## Current Work:

•Prevalence and associated risk factors of foot lesions in growing pigs

## Materials and Methods:

•93 farms were visited which were considered representative of the English population spatially and by the total proportion of the herd which was indoor/outdoor

•10 pigs randomly selected from a pen of 6, 8 and 14 week old pigs on each farm. Hind left foot examined

•Data on pen condition and construction were collected on all the pens where pigs were examined

### Data Analysis:

•Outcome: proportion of pigs affected with a particular lesion in sample from each pen; 4 most prevalent lesions modelled as separate outcomes

•2 level binomial logistic regression models built to account for clustering of pens within farms

•All models included observer identity (n = 8) and age because of the correlation with pen type


## Results:

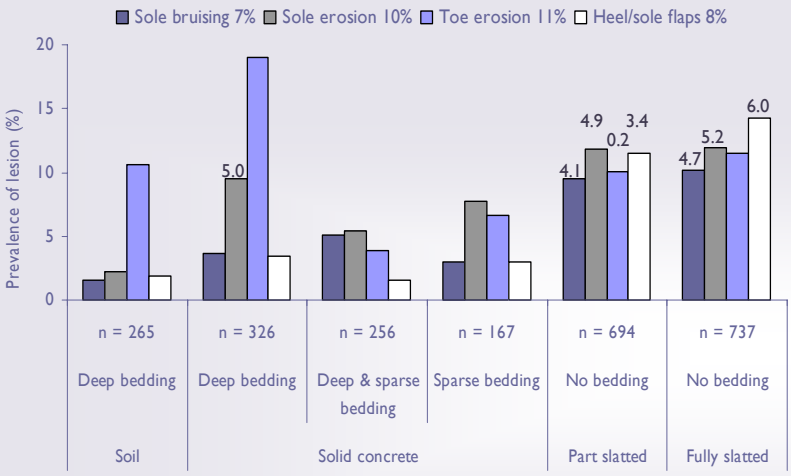
•Decrease in prevalence of sole bruising and sole erosion and an increase in prevalence of heel/sole flaps and toe erosion in 8 and 14 week old pigs compared with a baseline of 6 week old pigs

•Increase in prevalence of sole bruising, sole erosion and heel/sole flaps on all floor types compared with soil floors

•Increase in prevalence of toe erosion on soil floors compared with all other floor types except deeply bedded solid concrete pens

•The affected population of pigs could be reduced by housing pigs on the floor type associated with the lowest prevalence of that lesion e.g. if all weaner pigs housed on fully slatted floors were moved onto soil, there would be a 38% reduction of pigs with heel/sole flaps in the affected population

Percent of pigs affected with each lesion by floor type, odds ratios stated above bars where significant* (baseline of soil)




*models adjusted for age, observer, floor material, stocking density and floor condition

Population attributable percentages (B indicates baseline category, dark cells indicate a non significant relationship)

| Outcome | Soil | Solid concrete | | | Slatted | | Total reduction |
|---|---|---|---|---|---|---|---|
| | | Deep bedding | Deep & sparse bedding | Sparse bedding | Part | Fully | |
| Weaners (6 and 8 weeks) | | | | | | | |
| Heel/sole flap | B | | | | 55 | 38 | 93 |
| Sole bruising | B | | | | 46 | 32 | 78 |
| Sole erosion | B | | | 6 | 28 | 28 | 63 |
| Toe erosion | | | B | | | 32 | 32 |
| Growers (14 weeks) | | | | | | | |
| Heel/sole flap | | | B | | 18 | 21 | 39 |
| Sole bruising | | | | | B | 46 | 46 |
| Sole erosion | B | | | | 35 | | 35 |
| Toe erosion | | 49 | | | | B | 49 |

## Discussion:

•All lesions had a significant association with floor type. Sole erosion, heel/sole flaps and sole bruising were more prevalent on abrasive and slatted floors whereas toe erosion was more prevalent on softer surfaces which did not allow the hoof to be worn down

## Acknowledgements:

•Funded by DEFRA (AW0135)
•Assured British Pigs and Quality Meat Scotland
•Project research staff and field technicians
•Participating farmers