

## **AWN-PP-08**

### **TITLE**

#### **MODELLING THE EFFECT OF BIOSECURITY PRACTICES ON KEY PIG WELFARE INDICATORS**

Maria Rodrigues da Costa<sup>1,2</sup>, Nienke van Staaveren<sup>3</sup>, Julia Calderón Díaz<sup>1</sup>, Gerard McCutcheon<sup>4</sup>, Edgar Garcia Manzanilla<sup>1,2</sup>, Laura Boyle<sup>1</sup>

<sup>1</sup> *Pig Development Department, Teagasc - Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland*

<sup>2</sup> *School of Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*

<sup>3</sup> *Department of Animal Biosciences, University of Guelph, Guelph, N1G 2W1, Canada*

<sup>4</sup> *Pig Development Department, Teagasc Oak Park, Co. Carlow, Ireland.*

### **CONTENT**

Improved welfare and biosecurity are requirements of modern pig production. We hypothesized that improved biosecurity practices are related to better pig welfare. This study aimed to model the effect of biosecurity practices on pig welfare indicators such as tail, skin, and ear lesions, and lameness.

Irish farrow-to-finish farms (n=27) were assessed using Biocheck.UGent™ and their scores were related to the prevalence of lameness (LAME), and ear lesions (EAR) on-farm, and tail (TAIL) and skin lesions (SKIN) at slaughter. Multivariable linear regression was used to model the prevalence of welfare indicators based on scores for external and internal biosecurity's subdivisions. A forward regression approach was used with a 0.10 cut-off for predictors' inclusion in the model. Predictors are presented as coefficient ± standard error.

The models for LAME and EAR were not significant ( $P > 0.05$ ). The model for TAIL explained 45% of the variability. Farms with high internal biosecurity scores in the finisher unit (i.e. all-in-all-out management) had decreased TAIL ( $-0.24 \pm 0.051$  %,  $P < 0.001$ ), while farms with experienced managers tended to have decreased TAIL ( $-0.20 \pm 0.110$  %,  $P = 0.083$ ). Conversely, farms with good vermin and bird control had increased TAIL ( $0.13 \pm 0.057$  %,  $P = 0.031$ ). The model for SKIN explained 19% of the variability. Farms with experienced managers had increased SKIN ( $0.73 \pm 0.272$  %,  $P = 0.013$ ).

The experience of farm managers seemed to be positive in managing TAIL but detrimental for SKIN. This could be due to the (condemnation/financial) losses associated with tail lesions, which are major in comparison with those associated with skin lesions. Good internal biosecurity and management were related to lower prevalence of tail lesions, which are known to be welfare indicators of multifactorial cause. The improvement of biosecurity practices could have a protective effect of welfare.