

TITLE

MODELLING THE EFFECT OF RESPIRATORY DISEASE ON PRODUCTION PERFORMANCE OF FARROW-TO-FINISH PIG HERDS

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CONTENT

The impact of respiratory disease on production performance in pigs is of worldwide relevance but its magnitude has been poorly researched. The objective of this study was to estimate the effect of respiratory disease on production performance in Irish pig herds.

Fifty-six farrow-to-finish pig herds enrolled in the study. Data on pluck (heart, lungs, liver) lesions and blood samples (32 finisher pigs/farm) were collected at slaughter. An average of 162 (range 55-308) plucks per herd were assessed for pleurisy, pneumonia, lung abscesses, pericarditis, and milk spots. Serology was performed for swine influenza virus, porcine reproductive and respiratory syndrome virus (PRRSv), *Mycoplasma hyopneumoniae* and *Actinobacillus pleuropneumoniae* using IDEXX ELISA kits. Vaccination data was obtained through phone calls. The production performance indicators studied included average daily feed intake (ADFI), average daily gain (ADG), feed conversion ratio (FCR), and age at slaughter (AGE). The effect of respiratory disease on performance was modelled using multivariable linear regression. A forward regression approach was used with a 0.10 cut-off for predictors' inclusion in the model. Predictors are presented as coefficient \pm standard error.

The respiratory disease models explained the variability of ADFI, ADG, FCR, and AGE by 47, 40, 19 and 41%, respectively. The results indicated that PRRSv status and prevalence of cranial pleurisy (CP) were common predictors for poor ADFI, ADG and AGE. ADFI decreased with PRRSv S/P values (-45.1 ± 17.66 g/day) and CP (-183.0 ± 100.76 g/day). ADG decreased with PRRSv positivity (-31.4 ± 13.64 g/day) and CP (-200.6 ± 53.74 g/day). AGE increased with PRRSv S/P values (4.5 ± 1.78 days) and CP (39.2 ± 10.15 days).

Respiratory disease could explain large proportions of the studied performance indicators. PRRSv status was confirmed as an important risk factor for poor herd performance, while CP emerged as another key indicator to be monitored.