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THE INFLUENCE OF INFECTIOUS AND NON-INFECTIOUS FACTORS ON THE OCCURRENCE OF CATARRHAL PNEUMONIA IN SLAUGHTER PIGS FROM FARROW-TO-FINISH PIG HERDS

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The influence of infectious and non-infectious factors on the prevalence of pneumonia in slaughter pigs was investigated in a cross-sectional study involving 150 farrow-to-finish pig herds. The infectious factors were determined by the seroprevalence of five infectious agents at slaughter. Non-infectious factors were potential risk indicators for respiratory disease and were obtained during the herd visit. The presence of pneumonia was detected at slaughter on 25 lungs per herd. Out of five infectious factors, only Mycoplasma hyopneumoniae (Mh) came out significantly (P<0.05). The odds ratios for pneumonia with 10% and 50% increase in seroprevalence of Mh were 1.10 and 1.62 respectively. Three non-infectious factors i.e. season (p=0.0001), breed (p=0.0051), and the number of compartments (p=0.0293) were identified as additional significant risk indicators for pneumonia.

INTRODUCTION

Pneumonia with consolidated areas, especially from the cranial lobes, is one of the most important lung lesions in slaughter pigs and is usually associated with Mh infections. However, various other disease agents are also known to induce pneumonia. Furthermore, literature data suggest that pneumonia lesions are dependent on several environmental factors. The aim of this study was to analyze and quantify the influence of infectious and non-infectious factors on the prevalence of pneumonia in slaughter pigs from farrow-to-finish pig herds.

MATERIALS AND METHODS

Risk indicators for respiratory disease were obtained from 150 randomly selected farrow-to-finish pig herds. At slaughter, blood samples were taken from 25 pigs per herd. The seroprevalence of Mh, H_1N_1, H_3N_2, Aujeszky's disease virus (ADV) and PRRS virus (PRRSV) was determined on 25, 10, 10, 25 or 10 and 5 pigs of each herd respectively. The presence of pneumonia lesions was assessed on 25 other pigs by systematic sampling. A logistic regression analysis which includes herd as random factor was used in the analyses.

RESULTS AND DISCUSSION

The overall prevalence of pneumonia was relatively low (25%), probably because only active or healing lesions were recorded and healed lesions were neglected. The prevalence of pneumonia, regardless of severity was assessed since this parameter can be estimated precisely by a rapid gross visual appraisal of the lesions. Infectious and non-infectious factors which were significantly associated with the prevalence of pneumonia are shown in Table I.

Table I
Significant p-values and odds ratios of infectious and non-infectious factors associated with the prevalence of pneumonia lesions in slaughter pigs.

Infectious factor	p-value	OR
Mh	0.0191	
10% increase		1.10
50% increase		1.62
Non-infectious factor	**p-value**	**OR**
Season	0.0001	
Jan-Feb-Mar-Apr		2.00
Other months		1.00
Breed	0.0051	
Cross-bred		1.91
Pure-bred		1.00
Number of compartments per unit	0.0293	
increase of one unit		0.93

Although viral infections induce macroscopic pneumonia in experimental studies, their effect under field conditions is not so obvious since only Mh was significantly associated with pneumonia lesions. It was also demonstrated that non-infectious factors largely influence the prevalence of pneumonia at slaughter.

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