



BBD-061

M. HYOPNEUMONIAE, M. HYORHINIS AND M. FLOCCULARE, ALONE OR IN ASSOCIATION, IN ENZOOTIC PNEUMONIA-LIKE LESIONS: EXPLORATORY INVESTIGATION IN 666 PIG LUNGS FROM 47 HERDS

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Introduction

Enzootic pneumonia (EP), primarily caused by *Mycoplasma hyopneumoniae* (Mhp), is costly to the pig industry. In EP-like lesions, *M. hyorhinis* (Mhr) and *M. flocculare* (Mfloc) are also identified. The aims of this study were to assess (i) the frequency of associations and the amounts of Mhp, Mhr and Mfloc in lungs with EP-like lesions and (ii) the relationships with the severity of EP-like lesions.

Materials and Methods

The investigation involved 666 lungs collected at slaughterhouses (47 pig batches, Brittany). Lungs were scored for EP-like lesions and classified in three categories: no or mild, moderate, or extensive lesions. Lungs were analyzed by a multiplex qPCR to quantify Mhp, Mhr and Mfloc. The relationships between the extent of lesions and the laboratory results were determined by a multiple correspondence analysis, followed by a hierarchical clustering. The associations between *Mycoplasma* species and EP-like lesions were quantified by a logistic-regression analysis.

Results

Mhp, Mhr and Mfloc were found in 42.9%, 0.6% and 19.3% of lungs, with on average, 3.1×10^7 , 9.7×10^6 and 5.7×10^6 genome equivalents mL^{-1} , respectively. Mhp was associated with Mhr alone or with Mfloc alone in 1.9% or in 14.6% of lungs respectively. Three clusters of associations were found (i) no or mild EP-like lesions with PCR-negative lungs for all *Mycoplasma* species or PCR-positive lungs for Mfloc (ii) moderate to extensive lesions with PCR-positive lungs for Mhp, and (iii) extensive lesions with PCR-positive lungs for at least two *Mycoplasma* species. Mhp and Mhr detection significantly increased the odds for a lung to have extensive lesions. No relationship was found between the extent of lesions and the mycoplasma genome load.

Conclusion

Mhp and Mhr appeared to be the two species involved in the severity of EP-like lesions. These findings also underline the importance of the detection of *Mycoplasma* associations to better control EP.

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