IS THERE ANY RELATIONSHIP BETWEEN *MYCOLPLASMA HYOPNEUMONIAE* S/P RATIO VALUES AND ENZOOTIC PNEUMONIA-LIKE LESIONS?

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Introduction

Mycoplasma hyopneumoniae (Mhyo) is the causal agent of enzootic pneumonia (EP) in swine, a worldwide spread disease that mainly affects growing and finishing pigs. The main gross associated lesion is a craneo-ventral pulmonary consolidation. These lung lesions will be the responsible for the most significant EP clinical sign, a non-productive cough[1].

Although, it is known that serum antibodies are not protective against EP lung lesion development[1], ELISA is still one of the most used diagnostic tests to assess exposure to this pathogen. Therefore, it would be of interest to know if a relationship between Mhyo antibody titers and lung EP-lesion development exists. Thus, the goal of the present work was to assess if Mhyo serologic S/P ratios could be used to predict the occurrence of (EP)-like lung lesions in slaughter-aged pigs.

Materials and Methods

A total of 71 batches of pigs from 71 different farms were included in the study. A batch was defined as a group of pigs (approximately 100 animals) belonging to the same farm that were sacrificed on the same day at the slaughterhouse[2]. EP-like lesions were evaluated at the slaughterhouse using the Madec & Kobisch method. An EP-like lesion average value per farm (sum of individual lung EP-like lung scores/number of scored lungs) was calculated. Lung lesion score per farm was classified as high or low depending on the mean lung lesion score during the slaughterhouse inspection. In addition, blood samples from 20 pigs per batch were randomly collected. Blood samples were tested with a commercial kit (Mhyo antibody test kit, BioChek).

Correlation between mean S/P values of the 20 randomly bleed pigs and mean lung lesion score per farm was assessed at two different levels: (1) considering only those animals per batch showing EP-like lesions and (2) considering the whole batch. Moreover, a non-parametric test was used to compare S/P rations between batches with high and low EP-like lung lesion scores. Statistical analyses were carried out with SPSS v.15. The significance level was set at 0.05.

Results

A statistically significant association between mean Mhyo S/P ratio of the randomly selected pigs and the mean lung lesion scoring per farm was observed. Such association was observed both with the proportion of animals showing EP-like lesions (p= 0.007 R= 0.36) as well as with the mean S/P of the whole batch (p= 0.003 R= 0.38) (Figure 1). The global mean EP-lung lesion score observed was 3.52 (min 0, max 10.27). The results showed that farms with high EP-like lung lesion scores (n=27) had significantly higher mean serological S/P values (1.26 ± 0.71) than farms with low (n=44) EP-like lesion scores (S/P mean value of
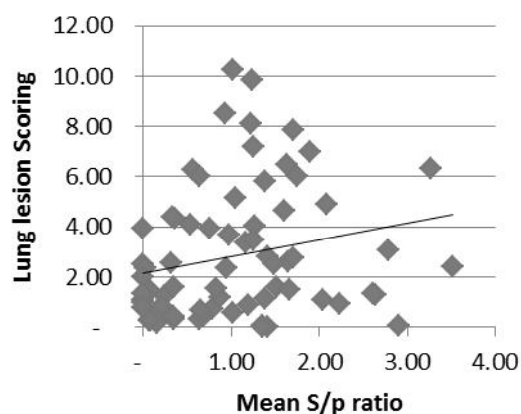

Figure 1. Mean S/P ratio versus mean EP-lung lesion score per batch

0.90 ± 0.91).

Discussion and Conclusions

Results of this study suggest that mean serological S/P ratio at slaughterhouse could be used as a potential tool to predict the mean EP-like lesions scoring. Nevertheless, and taken into account the Mhyo infection dynamics, it would also be interesting to assess the association observed between the mean serological S/P values and the lung lesion scoring throughout the pig production period.

Literature cited

1. Sibila et al., 2009. Vet J 181: 221-31.
2. Fraile et al., 2010. Vet J 184: 326-33.