

THE USEFULNESS OF SPES SCORE TO SCREEN FOR *ACTINOBACILLUS PLEUROPNEUMONIAE* INFECTIONS IN ENDEMICALLY INFECTED PIG HERDS

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Introduction

Actinobacillus pleuropneumoniae (APP) is the causative agent of porcine pleuropneumonia.

Diagnosis is often done via serological investigations, with slaughterhouse checks as complementary tool. This study compares pleurisy at slaughter with serological response in herds with and without clinical signs of APP.

Materials & Methods

Seven herds were allocated into clinically affected (by APP; n=4) and non-clinically affected (n=3) herds according to symptomatology and/or recent bacteriological isolation. For each herd, pleurisy prevalence was recorded at slaughter (SPES score) and APP-index calculated. A cross-serological investigation was performed at herd level in 4 groups of 5 animals each [6, 10, 16 and 22 weeks of age (wk)]. APP-toxin (ApxI, ApxII, ApxIII) and Outer Membrane Protein (OMP) antibody response was tested by indirect-ELISA (MSD AH Service Lab, Boxmeer, The Netherlands). ApxIV antibodies were analyzed by IDEXX ApxIV ELISAR.

Results

Average pleuritis prevalence was 52.4%^A [38.4-64.6] and 5.9%^B [3.7-7.0] in affected and nonaffected

herds, respectively (P<0.05). Average APP-index (\bar{x} sd) was higher for affected (1.16 \bar{x} 0.35)

compared with non-affected herds (0.07 \bar{x} 0.06) (P<0.05). SPES score distribution for affected and

non-affected herds was: SPES0 (48% vs 94%), SPES1 (13% vs 3%), SPES2 (16% vs 1%), SPES3 (9%

vs 1%) and SPES4 (14% vs 1%). Mean antibody levels (log₂ scale \bar{x} sd) for ApxIII at 6, 10, 16 and 22

wk were 10.8 \bar{x} 1.2, 10.1 \bar{x} 3.2, 14.0 \bar{x} 1.9 and 13.3 \bar{x} 2.8 for affected and 7.7 \bar{x} 1.0, 7.1 \bar{x} 1.1, 7.6 \bar{x} 1.0 and 7.6 \bar{x} 0.7

for non-affected herds (P<0.05). Similar tendency was described for ApxI, ApxII and OMP. The

prevalence of seropositive pigs for ApxIV at 6, 10, 16 and 22 wk was 95%, 100%, 75% and 75% in affected and 87%, 53%, 27% and 0% in non-affected herds.

Discussion & Conclusion

Seroconversion to APP in clinically affected herds coincided with severe and highly prevalent pleurisy at slaughter. Slaughterhouse checks are useful to monitor APP and categorize clinically affected herds.