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Seroprevalence of important swine pathogens in Polish farms

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Introduction

Porcine reproductive and respiratory syndrome (PRRS), porcine circovirus associated disease (PCVAD) are the most important viral diseases in the global swine industry, contribute to serious economic losses. *Mycoplasma hyopneumoniae* (Mhp), *Actinobacillus pleuropneumoniae* (App), swine influenza virus (SIV) are the most common cause of respiratory diseases in pigs. This pathogens are widespread in swine herds and results mainly in reduced growth and increased feed-conversion. Leptospirosis and transmissible gastroenteritis (TGE) are valid diseases detected in swine producing countries. The aim of the present study was to perform cross–sectional survey on 23 Polish pigs farms to estimate the prevalence of antibodies against swine pathogens mentioned above.

Materials and Methods

Study design: 1,343 blood samples were collected form different age groups of pigs from 23 randomly selected farrow–to-finish farms with various health status. From each, 32 to 137 blood samples were collected, depending on the size of herd. Samples were analyzed for presence of antibodies against: PRRSV using "in house" ELISA tests, PCV2 by commercial kit (INGEZIM CIRCOVIRUS IgG/IgM, Ingenasa, Spain), Mhp by Oxoid ELISA test (IDEIA™ MYCOPLASMA HYOPNEUMONIAE EIA KIT, Oxoid, UK), App by APP ELISA (ID Screen® APP Screening (serotypes 1 through 12) Indirect ELISA kit, ID.vet, France), TGEV by ELISA (INGEZIM TGEV, Ingenasa, Spain). A hemaglutination inhibition (HI) test was used to detect antibodies against three subtypes of swine influenza viruses. Antibodies against Leptospires were detected by micro-agglutination test (MAT). Commercial ELISA tests were performed according to the manufacturer's instructions. Detection of specific antibodies classified farm as a seropositive.

Results

The serological results are presented in table 1. The seroprevalence of *Mycoplasma hyopneumoniae* was 91.3% (21 farms positive of 23 tested). A 88.9 % of 18 investigated farms were seropositive to *Actinobacillus pleuropneumoniae*. Moreover, 100% of farms were positive for PCV2 and SIV. PRRSV seropositive animals were detected by ELISA on 56.5 % of tested farms (13 positive of 23 tested). Considering *Leptospira spp*. there was 22.7 % seropositive farms (5 positive of 22 tested). TGEV/PRCV antibodies were not detected.

Table 1. Serological results by ELISA and MAT tests

Pathogens	No. farms tested	No. farms positive	% positive
Mycoplasma hyopneumoniae	23	21	**91.3**
PRRSV	23	13	**56.5**
PCV2	23	23	**100**
Leptospira spp.	22	5	**22.7**
TGEV/PRCV	21	0	**0**
Actinobacillus pleuropneumoniae	18	16	**88.9**
SIV	20	20	**100**

Conclusions and Discussion

This results show that SIV, *Mycoplasma hyopneumoniae and Actinobacillus pleuropneumoniae* are widespread pathogens in Polish pig farms. This serological survey confirms major role of respiratory diseases as an important cause of economic losses in Polish swine industry. Results concerning PCV2 confirm ubiquitous character of this pathogen. About half of tested farms were positive for PRRSV and almost one in four were positive for *Leptospira spp*. Results indicate also lack of antibodies against TGEV in Polish swine herds. Obtained results are similar to those given by Chen Q.X. et al. for PCV2 in China, Cunningham G. et al. for PCV2 in Canadian swine herds, Gutierrez-Martin C.B. et al. and Lopez-Soria S. et al for App, PRRS, SIV in Spanish finishing pigs. The studies will be continued and the another pig farms will be examined.

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References

1. Chen Q.X. et al.: 2007, Revue Med. Vet 158, 458-462
2. Cunningham G. et al.: 2008, Proc. 20th IPVS Congr. Durban
3. Gutierrez-Martin C.B. et al.:2000, Res Vet Sci 68, 9-13
4. Lopez-Soria S. et al.: 2010, Transbound Emerg Dis 57, 171-179