

SURVEY OF PSEUDORABIES SERO-PREVALENCE IN 11 PROVINCES OF CHINA

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Introduction

Pseudorabies (PR) disease has an important economic impact in pig production (1). PR's effects include abortions, stillbirths, high mortality in piglets due to nervous symptoms, and respiratory distress with growth retardation in growing-fattening pigs. PR's positive status is a limiting factor especially for gilt suppliers or pork exporting companies. Despite the fact that many farms were able to eradicate PR in recent years and almost all farms vaccinate against PR, we can still consider PR an endemic swine disease in all provinces of China.

This study aimed to determine new epidemiological data for PR taken from commercial farrow-to-finish swine farms (300-3000 sows) located in eleven Chinese provinces.

Materials and Methods

The survey involved 11 different Chinese provinces. 4546 serum samples were collected from breeders from 157 different farms from Jan-2006 till Oct-2007 (Table 1.). Sampling was designed according to the ratio of 5% of breeders, including boars, gilts and sows at different parities.

Samples were tested with a differential monoclonal blocking ELISA test for gE antibodies (CIVTEST™_{SUIS} ADV gE; Laboratorios HIPRA S.A.) in order to determine the seroprevalence. A farm was considered PR positive when at least one sample was gE positive (gE+).

Table 1. Distribution of farms and samples

Province	N° of farms	N° of samples
Hebei	27	862
Jiangxi	30	756
Guangdong	9	378
Henan	15	422
Heilongjiang	13	362
Liaoning	8	322
Tianjin	9	186
Sichuan	10	210
Hubei	23	638
Shandong	7	268
Zhejiang	6	142

Results

Percentage of positive farms, positive breeders and the average prevalence of PR in positive farms are displayed in Table 2.

Table 2. Serological results by province.

	+ Farms (%)	+ Breeders (%)	Prevalence within + Farms (%)
Hebei	63.0	33.2	54.0
Jiangxi	33.3	9.8	21.6
Guangdong	66.7	5.3	8.9
Henan	80.0	29.6	34.2
Heilongjiang	38.5	8.8	31.1
Liaoning	50.0	18.9	33.9
Tianjin	88.9	21.0	21.8
Sichuan	20.0	1.0	5.6
Hubei	60.9	15.4	24.4
Shandong	57.1	10.8	17.8
Zhejiang	66.7	17.6	23.8
TOTAL	54.8	17.4	30.1

+: Positive.

Discussion

54.8% of farms sampled were PR positive. In all the provinces included in the study positive farms exceeded 30%, with the exception of Sichuan (20%). With the exception of Sichuan and Guangdong, the PR prevalence within positive farms was higher than 15% in all provinces.

These results are similar to another epidemiological study (2) in terms of prevalence within positive farms (31.9% vs. 30.1%) but not in terms of positive farms (81.7% vs. 54.8%), probably due to the farm and province selection criteria.

We should mention that small (<300 sows) and "backyard" farms were not included in our study and that this could increase the final reported prevalence, since most farms of this type lack any PR disease control. In this epidemiological situation, the implementation of proper PR vaccination protocols for both sows and piglets seems to be at the moment the most practical strategy to control PR and ensure adequate immune competence against the virus (3).

The systematic implementation of vaccination protocols and serological monitoring combined with test-culling methods and the efficient implementation of basic biosecurity rules can lead to PR prevalence reduction within farms or even to eradication (4) as previously reported for some Chinese farms.

Reference

- (1) Miller GY., *et al.* *J. Am. Vet. Med. Assoc.*, 15: 208-13, 1996.
- (2) Wang K., *et al.* 3rd APVS Congress Proceedings, Wuhan, China, 2007. 58 (p143)
- (3) Willeberg P., *et al.* *Act. Vet. Scand. Assoc.* 90:25-51, 1996.
- (4) Suo. X., *et al.* 3rd APVS Congress Proceedings, Wuhan, China, 2007. 60 (p145)

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