

SEROPREVALENCE OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME (PRRS)

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SUMMARY

Of two hundred serum samples of breeder pigs collected randomly from fourteen pig farms in ten different locations of Perak, porcine reproductive and respiratory syndrome (PRRS) antibodies were detected in 48.5% of the samples by using a ELISA kit, demonstrating a significant presence of PRRS in pigs in Perak, Malaysia.

Keywords: Porcine reproductive and respiratory syndrome, seroprevalence.

Porcine reproductive and respiratory syndrome (PRRS) is an infectious and relatively new pig disease. It was first reported in North America in 1987 as the mystery swine disease (MSD) and later, swine infertility and respiratory syndrome (SIRS) (Hill, 1990). It has since spread throughout Europe under names of New Pig Disease, porcine epidemic abortion and respiratory syndrome (PEARS) and blue ear disease in England. The cause of the disease, the Lelystad agent was first described in the Netherlands by Wensvoort et al., (1991) and is currently classified as a RNA virus belonging to the Arteriviridae family (Muelenberg et al., 1992). PRRS has become endemic in major swine producing areas of North America and Europe, with potential long-term effects on pig production. The disease has become so widespread and the spread so rapid that within a few short years, most of the pig producing countries have been affected.

In its endemic form, the disease is primarily associated with the development of secondary infections resulting from the immunosuppressive effects of the virus (Albina et al., 1994). The virus has a predilection for immune cells causing death of alveolar macrophages leading to interstitial pneumonia which is most severe in nursing pigs (Pol et al., 1991). In sows, it causes reproductive failure resulting in premature births, late term abortions, pigs born weak, increased stillbirths, mummified foetuses, decreased farrowing rates and delayed return to oestrus (Voicu et al., 1994). Although PRRS has been suspected to be present in Malaysia (Too, 1995), to date no laboratory tests have been conducted to confirm its presence. This paper reports the results of the first serological survey of

PRRS in Malaysia conducted in 1994-95 on pig serum samples collected from Perak.

Two hundred serum samples from breeder pigs of all ages were collected from fourteen farms in ten different localities of Perak over a period of a year. These farms had a standing pig population (SPP) ranging from 1,500 - 30,000 and the pigs were not vaccinated against PRRS. The samples were tested for antibodies against PRRS using enzyme-linked immunosorbent assay (ELISA) virus antibody test kit (*IDEXX-Herdchek*). The presence or absence of antibody to PRRS was determined by calculating the ratio of optical density of the test to positive sample (S/P). Samples were considered positive when (S/P) ratio was greater or equal to 0.4.

Of the two hundred serum samples tested, ninety-seven samples (48.5 %) were found to be positive for PRRS antibodies (Table 1).

Most of the farms tested for PRRS showed evidence of exposure to the virus, indicating a widespread seroprevalence of the syndrome in Perak. The spread of the syndrome could have been due to the regular importation of pigs into the country, aided by the numerous modes of transmission of the syndrome. As 200 random samples were collected from 14 farms, it is unlikely that all the pigs were imported and that they had all acquired antibodies against PRRS from abroad.

Further studies are however required to formulate diagnostic tests for the detection of clinical cases of PRRS and to investigate the extent to which PRRS affects the swine industry in Malaysia.

Table 1. Pig serum samples tested for PRRS antibodies by ELISA

Location of farms	No. of farms	No. of samples	Positive samples	% Positive
A. Kuning	1	20	16	80
Bidor	1	20	15	75
B. Gajah	1	20	0	0
Chemor	1	20	2	10
Gopeng	2	20	10	50
Ipoh	3	30	21	70
K. Kuang	1	10	7	70
Sg. Siput	2	20	0	0
Sitiawan	1	20	14	70
P. Buntar	1	20	12	60
Total	14	200	97	48.5

ACKNOWLEDGEMENTS

The authors would like to thank the Director General of Department of Veterinary Services for permission to publish this manuscript and the Director of Veterinary Research Institute, Ipoh for the financial support to carry out this study. Thanks are also due to Nik Azmi Nik Him for his technical assistance.

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RINGKASAN

SEROPPREVALENS SINDROM PEMBIAKAN DAN PERNAFASAN PORSIN (PRRS)

Antibodi Sindrom Pembinaan dan Pernafasan (PRRS) telah dikesan dalam 48.5% daripada dua ratus sampel serum babi pembiakbaka yang dikumpul secara rambang daripada empat belas ladang babi pada sepuluh lokasi di negeri Perak, dengan mengguna kit ELISA, dan ini menunjukkan wujudnya secara tererti PRRS dalam babi di negeri Perak, Malaysia.