Infectious Causes of Infertility in Swine in Thailand: Porcine Reproductive and Respiratory Syndrome Virus (PRRSV)

Padet Tummaruk¹, Pachara Pearodwong¹, Em-on Olanratmanee²

¹Department of Obstetrics, Gynaecology and Reproduction, Faculty of Veterinary Science, Chulalongkorn University, Pathumwan, Bangkok 10330, Thailand
²Faculty of Veterinary Medicine, Rajamangala University of Technology Tawan-ok, Chonburi 20110, Thailand

Abstract
The present study aims to review the prevalence of important reproductive diseases in swine commercial herds in Thailand with special emphasize on porcine reproductive and respiratory syndrome virus (PRRSV), Aujeszky’s disease virus (ADV), porcine parvovirus (PPV) and porcine circovirus type 2 (PCV2). Retrospective data in swine commercial herds in Thailand found that PRRSV and ADV were detected in approximately 80% and 5% of the pigs, respectively. Furthermore, in the replacement gilts, PRRSV, ADV and PPV were detected in 88%, 4% and 99%, respectively.

Introduction
In general, the viral pathogens causing a large impact to the swine industry in Thailand during the last decade include classical swine fever virus (CSFV), foot and mouth disease virus (FMDV), porcine reproductive and respiratory syndrome virus (PRRSV), Aujeszky’s disease virus (ADV), porcine parvovirus (PPV) and porcine circovirus type 2 (PCV2). The last four pathogens also contribute to reproductive disorders in gilts and sows (1). Nowadays, co-infection of these pathogens is commonly observed in the modern swine industry (2, 3)………………

Porcine reproductive and respiratory syndrome virus (PRRSV)
Porcine reproductive and respiratory syndrome (PRRS), caused by the PRRSV, is one of the most important diseases in the pig production industry throughout the world (4)………………

Aujeszky’s disease virus (ADV)
In 1995, a serological survey on glycoprotein I (gI) of ADV from 15 swine herds in Thailand indicated that 98% (597/608 samples) of the pig samples are positive (5). Our recent study based on PRRSV PCR detection in Thailand found that the strain of PRRSV isolated during 2005 to 2010 was genotype 2 (54.5%), genotype 1 (31.0%) and mixed genotypes (14.5%) It was found that PRRSV was detected by PCR in the tissue samples more frequently than the semen and serum samples. The prevalence of PRRSV was high in the nursery pigs. A high prevalence of PRRSV was found in the hot season, indicating that climatic factors may also contribute to the prevalence of PRRSV in Thailand.

However, only antibody titer (S/P ratio) might not be a good indicator for the existence of PRRSV in tissues or blood circulation of the pigs (demonstrated that the virus could be found in the uterine tissue of the gilts with either high or low antibody titer. PRRSV antibody titer differed considerably among the herds. The reason might be due to genetic variation of PRRSV among the herds. Since the antibody formation of PRRSV was greatly affected by genetic variation and amino acid sequence of PRRSV, therefore, only antibody titers may not be enough to examine the PRRSV circulation within the herds. Nevertheless, the antibody titer of PRRSV, in many PRRSV non-vaccinating herds in Thailand, is intensively examined in replacement gilts for several times prior to being introduced to the breeding houses. In some breeding herds, PRRS modified live-virus vaccine is used in the ……………

General discussion
The present review provided information concerning with antibody titers against the selected reproductive diseases in the pigs raised in Thailand……...

Conclusions
Most of the replacement gilts were exposed to PRRSV (84%), PPV (97%) and ADV (4%) before entering the breeding house.………………

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References