25TH INTERNATIONAL PIG VETERINARY SOCIETY CONGRESS

2018 International PRRS Symposium

June 11–14, 2018
Chongqing, China

Healthy Pig
Safe Pork

Organizer:
International Pig Veterinary Society (IPVS)

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Beijing Boyar Communication Co., LTD

PROCEEDINGS VOLUME II
POSTER PRESENTATIONS

I -097

Absence of PCV2 viremia in new-born pigs on 4 Dutch endemically infected sow farms

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Introduction
Whereas PCV2 associated disease (PCVAD) occurs mostly in pigs of >10 weeks of age, the time of infection is usually earlier. The number of piglets born viraemic significantly influences infection dynamics and consequently the suitability of control strategies [1]. Previous studies indicated a high PCV2 prevalence at birth [2,3,4], but recent studies are scarce [5]. Objective of this study: to estimate PCV2 prevalence in new-born pigs on endemically infected farms.

Materials and Methods
Assuming a beta binomial distribution of PCV2, sample size calculation resulted in sampling 8 piglets from 11 litters to obtain a prevalence estimate of 0.3±0.1 per farm, with a between litter variation of rho=0.5. The study was performed in four farms, to improve external validity. Farm inclusion criteria were: breeding own replacement stock, no PCV2 sow vaccination, dynamic sow group housing, no clinical PCVAD. From piglets, EDTA blood samples were obtained from the umbilical cord directly after expulsion. From sows, serum samples were obtained after farrowing. All piglet and sow samples were analysed by qPCR for PCV2 DNA and serum samples were analysed for IgM and IgG antibodies by ELISA.

Results
0/352 piglets and 0/44 sows tested positive for PCV2 DNA. None of the sows tested positive for IgM. In farm A, none of the sows tested IgG positive, whereas in farms B, C and D, 13/33 sows tested PCV2 IgG positive.

Conclusion
The prevalence of PCV2 in new-born piglets in the sampled herds is much lower than may be expected from literature [2,3,4], but matches recent publications [e.g. 5]. The findings warrant strict implementation of hygienic measures to prevent infection of PCV2 free litters.

Keywords: epidemiology, PCV2, infection dynamics, new-born piglets, umbilical cord