Successful WT-PRRSV elimination in a 1,500-sow farrow-to-finish system through mass vaccination and keep loading PRRSV negative gilts

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INTRODUCTION

PRRS has a significant economic impact on Chinese swine industry. Since high swine farm density and a lot of constrains to controlling PRRS, elimination wild type PRRSV (WT-PRRSV) is very hard in China. Some farmers used repopulation and depopulation successfully eliminated WT-PRRSV, but this method is very costly. We report here on the successful elimination of WT-PRRS virus from a 1,500 sow farrow-to-finish production system easily to success.

MATERIALS AND METHODS

In 2006 summer, a closed 1,500 sow production system suffered highly pathogenic PRRS outbreak. Nursery mortality went up to 30 % and caused abortion storm in the next 1 month. Then 3 commercial vaccines were chosen one by one to control PRRS, but mortality still moved between 15 % – 30 %. Since March 2008, Ingelvac® PRRS MLV was used to control PRRS, and executed as below: stop loading gilts for half year, gilts isolated at least 2 month and vaccination twice before moved to breeding herd; breeding herd vaccination 2 times at beginning apart 30 days, then quarterly vaccination. Piglets vaccination at 15 days. All the nursery and finishing sites were operated strictly all in/all out by site. Farm was just open to load PRRS negative gilts twice from 2008 to 2015 and continued using Ingelvac® PRRS MLV for 7 years. Different age pigs' serum samples were collected for disease monitor 2 to 6 times every year. Serum samples collected from 2009 to 2015 is 280, 90, 31, 87, 110, 136 and 80 separately. All samples were individually tested on the IDEXX PRRS 2XR ELISA; then pooled 5:1, with the pools tested using a PCR and sequenced PRRSV positive samples at Nanjing agriculture university diagnostic laboratory. Local veterinary station collects 30 tonsil samples to test WT-PRRSV every half year.

RESULTS

Both serum and tonsil samples from growing pig sites have tested WT-PRRSV negative by PRRS PCR and also not show PRRS clinical sign since 2014. WT-PRSSV positive rate within serum from 2009 to 2014 is 22.2 %, 11.1 %, 16.1 %, 5.7 % and 4.5 %. WT-PRSSV positive rate within Tonsil from 2009 to 2014 is 66.7 %, 41.7 %, 16.7 %, 8.3 % and 8.3 %. Meanwhile, wild type CSFV and PRV were also eliminated from 2013.

Table 1: Serum and tonsil sample WT PRRSV PCR test result from 2009 to 2015

Year	Samples tested (serum / tonsil)	Positive rate (serum / tonsil) %
2009	280 / 60	22.2 / 66.7
2010	90 / 60	11.1 / 41.7
2011	31 / 60	16.1 / 16.7
2012	87 / 60	5.7 / 8.3
2013	110 / 60	4.5 / 8.3
2014	136 / 60	0/0
2015	80 / 60	0/0

CONCLUSION

Continuing to use Ingelvac® PRRS MLV and just load negative gilts twice from 2008 to 2015 is very important to this successful elimination. We can learn from this case continue using one effective PRRS MLV and loading negative gilts can successfully eliminate wildtype PRRSV.