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David Brown

Logo Design
Ruth Cronje, and Jan Swanson;
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PRRSv stabilization and control using modified-live vaccine, herd closure, and routine serology

J Husa[A], G Anderson[A], N Argabright[B], M Carlson[C], R Philips[A], JT Holck[A]
[A] Boehringer Ingelheim Vetmedica, Inc., Ames, IA, USA
[B] MGM Pork, LLC, Battle Creek, IA, USA
[C] Valley Veterinary Center, LLC, Cherokee, IA, USA

Introduction and Objectives

Porcine Reproductive and Respiratory Syndrome (PRRS) causes average annual losses of $5.60 per pig produced[1]. Herd stabilization and control have been reported with modified-live vaccine[2,3], herd closure[4], virulent serum injection[5], biosecurity[6], and combinations thereof[7,8]. This case report describes stabilization of an outbreak using mass vaccination with Ingelvac® PRRS ATP (ATP) (Boehringer Ingelheim Vetmedica, Inc., St. Joseph, MO) and herd closure. It also details PRRSv control using whole-herd immunization, routine diagnostics, and improved biosecurity.

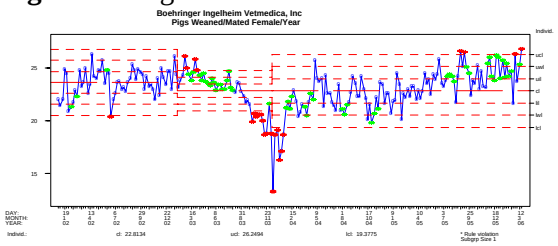
Case Description

The farm is a 1270 sow, farrow to wean herd. Gilt development (GDU) uses multiple sites and, before the break, was continuous flow. ATP has been given quarterly to all adults since February 2003. Gilts receive ATP at 8 and 4 weeks prior to herd entry. Prior to the break, developing gilts were not screened for PRRSv. Signs of PRRSv were reported on December 2, 2003 with fever, abortions, and mortalities. The farm was loaded with gilts, mass vaccinated with ATP on December 10, 2003, and again on January 6, 2004, and closed for 9 months. Quarterly vaccinations resumed in April 2004. Annual biosecurity assessments[9] began and resulted in improvements including serum testing of GDU gilts, dams, and suckling and growing pigs.

Results

Symptoms returned to pre-outbreak levels 3 to 6 weeks after initial vaccination (Figure 1). No negative effects (abortion, fevers, etc) from this protocol were reported or shown on performance records. Today the herd produces over 25 pigs/mated female/year. PRRSv was detected in 1 piglet serum sample in March 2004. Since then, for 25 months, monthly 20 to 30 head piglet PCR surveys have remained negative. Gilts at nursery exit have tested negative since screening started in September 2004. Sentinel boars have remained negative since introduction in early 2005. GDU serology has detected wild-type PRRSv twice, first with the initial isolation group screened in December 2003 and again in May 2005. Both sets of gilts were denied herd entry and sold to slaughter.

Figure 1 – Pigs Weaned/Mated Female/Year



Statistical Process Control analysis was performed using NWA Quality Analyst™ v5.2 (Northwest Analytical Inc., Portland, OR, USA).

Conclusions

Modified-live PRRS vaccine can stabilize a herd using mass vaccination and closure. In this study, Ingelvac® PRRS ATP was safe when administered to PRRS positive adult animals at all stages of production. Routine testing of seedstock prior to introduction can be an effective barrier to PRRSv entry. When suspect animals are denied entry, subsequent outbreaks can be prevented.

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