Economic benefits from the eradication of enzootic pneumonia and PRRS from a new 800gilt herd

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Introduction:
In 2008, due to a period of high feed prices and poor meat prices, it was decided to kill out one of three approx. 800 sow herds (Herd 1), which was badly affected with chronic porcine circovirus type 2 (PCV2), porcine reproductive and respiratory syndrome virus (PRRSV), enzootic pneumonia (EP) and *Actinobacillus pleuropneumoniae* ST3. Herd 2, which was also positive for PRRS, EP & PCV2 but had a good reproductive performance and low post-weaning to slaughter mortality, was to be the source of gilts for Herd 1. It was decided to try to eliminate PRRS and EP through vaccination and medication prior to farrowing. Elimination of PRRS had been described (1) using gilt pool management and infection stabilization and *Mycoplasma hyopneumoniae* (*Mhp*) elimination by the use of tiamulin and chlortetracycline in combination (2).

Materials and Methods:
Approximately, 50 cross-bred (LRxLWXLW) gilts/week were weaned at 4 weeks of age into straw-based accommodation over a 21week period from the start of 2008. The young pigs were vaccinated with a killed mycoplasma vaccine (Ingelvac® M Hyo) at 3 weeks of age and again at 8 weeks of age. A PCV2 vaccine (Ingelvac® Circoflex) was given also at 3 weeks of age. A live PRRS vaccine (Porcilis® PRRS) was given at 8 weeks of age. Following the closure of Herd 1 and the removal of all pigs at the beginning of June, the premises were thoroughly cleaned and disinfected. Three weeks later (21st June) the gilts were moved over in batches of 300 from Herd 2. Matings were started in the older gilts on the 11th of October and they were given Porcilis PRRS and a parvovirus and erysipelas vaccine (Porcilis® Ery + Parvo) 3 weeks before service. To ensure the required uniform immunity to PRRS, the whole gilt herd was vaccinated on 24th November with Porcilis PRRS (live), an inactivated PRRS vaccine (Progressis®) on the 15th of December and a final Porcilis PRRS (live) on the 5th of January, 2009. Medicated feed was also started on the 5th of January, 2009 for 6 weeks and containing sufficient tiamulin (Denagard® Premix) at 500ppm and chlortetracycline (Aurogran® Premix) 1500ppm to give 5 and 15mgs of active/kg bodyweight respectively. The first farrowings commenced on the 3rd of February. The younger gilts (<300 days of age) and boars were also injected with tiamulin (Denagard 200 injectable) at 15mg/kg bodyweight, 3 weeks into the in-feed medication period.

Blood samples were taken from 60 pigs (8-22 weeks old) on July 14th and examined by ELISA tests for PRRSV (LSI Hipra) and *Mhp* (DAKO blocking). In December, an acute outbreak of coughing occurred in Herd 1 and a further 30 samples from 16-20 week old pigs were taken. A number of lungs at slaughter were also examined for EP lesions & pleurisy in July (240) and December (115).

Results:
Table 1. Blood test results for PRRSV and *Mhp.*

Blood tests	No of samples	PRRSV +ve	*Mhp* +ve
July 2009	60	0	0
Dec 2009	30	15 (50%)	0 (0%)

Table 2. Comparative production figures before and after PRRSV and EP eradication programme in Herd 1

	Herd 1		Herd 2
	Pre-prog 2007	Post-prog 2009	Original herd 2009
No born alive	11.9	13.4	12.0
Mort pre-wean	9.8%	8.5%	7.5%
Mort post wean	11.4%	7.6%	3.5%
FCE	2.59	2.46	-

All of the lungs examined were free from EP lesions. Pleurisy had fallen from >30% in 2007 to <6% in 2009.

Discussion:
The EP part of the programme appears to have been very successful for over a year according to blood and lung lesion results. There appears to have been a breakdown in PRRSV in December, although the herd remained free clinically for over 10 months, suggesting the programme had been effective originally. Contaminated transport was the suspected cause. Number of pigs born alive/litter was increased by 1.5. Mortality was reduced in all stages of production by 5.1% but from post-weaning to slaughter by 3.8% or an extra 730 pigs sold resulting in a £25,500 margin over feed. FCE was reduced by 0.13, which equated to savings of £34,944, and a combined total of £60,444. PRRS and EP medication costs were £11,970, so the med cost/benefit ratio was 1: 5.

References:
1.Dee, S. et al (1994) SHAP, 3, 2, 64-69
2.Baekbo, P. et al (1994) Proc. 13th IPVS Congress, p135