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Successful attempt to eradicate PRRS virus and enzootic pneumonia from a breeder/finisher herd

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INTRODUCTION

The farm comprised 450 breeding sows and stock taken through to bacon, all on one site. The farm was a closed herd with importations of semen and gilts coming from the finishing herd. The farm was infected with PRRS virus, against which sows were not vaccinated, enzootic pneumonia (EP) (*Mycoplasma hyopneumoniae*) as well as pleuropneumonia (APP) (*Actinobacillus pleuropneumoniae*) and Glässer's disease (GD) (*Haemophilus parasuis*) but no *Streptococcus suis* had been reported previously. The farm was planning to replace the growing accommodation (open straw yards) with separate slatted floor pens and thought this would be a good opportunity to depopulate the growing side of the herd and focus on the breeding herd to eradicate some of the endemic diseases present. They planned to eliminate PRRSV and EP and hoped this would then alleviate the APP and GD.

MATERIALS AND METHODS

Gilts at approximately 6 months of age were stockpiled from the finishing house prior to the start of the eradication programme and reared off site. They were vaccinated against *M. hyopneumoniae* and given tulathromycin (Draxxin® – Zoetis) to help resolve any respiratory infections and encourage lung lesions to heal. All of the breeding stock were vaccinated with a live PRRSV vaccine (Porcilis PRRS – MSD), which was repeated one month later and followed with a killed PRRSV vaccine (Ingelvac® PRRS KV – Boehringer Ingelheim) (1). When all the new gilts were 10 months of age, the whole breeding herd was treated with tiamulin (Denagard®– Elanco) in feed at 5mg/kg bwt plus chlortetracycline (Aurofac® - Zoetis) 15mg/kg bwt for 4 weeks to eliminate *M. hyopneumoniae* (2). Piglets were injected with tulathromycin (Draxxin® – Zoetis) on a weekly basis and weaned off site. Piglets were monitored for PRRSV by PCR using saliva from rope tests and pooled blood samples and *M. hyopneumoniae* by PCR also of saliva, to check for freedom of infection. Once cleared by PCR, the piglets were then weaned back on site. Lungs were checked for lesions on a regular basis, approximately every 6 months at the slaughterhouse.

RESULTS

Slaughterhouse lung lesion scores were compared from before (23/1/2014) and after the programme (3/11/2015).

Table 1. Comparison of slaughter house lesions before and after eradication

Parameter	Before eradication (23/1/14)	After eradication (3/11/15)
Lung lesion score	8.4	0
APP-like lesion score (%)	1.1	0
Pleurisy (%)	22.4	1.5
Pericarditis (%)	6.7	1.5

EP-like lesion scores had fallen from 8.4 to 0; pleuropneumonia lesions fallen from 1.1% to 0%; pleurisy had declined from 22.4% to 1.5%; pericarditis had fallen from 6.7% to 1.5%. No routine antibiotic use is applied during the growing period but occasionally outbreaks of coughing and lameness have occurred, especially after major fluctuations in temperature. APP has been re-isolated on the farm, although GD was expected and also *S. suis*, during the outbreaks of respiratory disease.

The 6 month's performance data before the eradication programme and same months since (April-September) were compared.

Table 2. Comparison of performance data before and after eradication

Parameter	Before eradication	After eradication	Improvement (%)
Mortality weaning to slaughter (%)	4.7	3.1	34.0
ADG (g)	626	765	21.6
FCE	2.62	2.22	15.3

Mortality post weaning to slaughter has reduced from 4.7 to 3.1%, average daily gain (ADG) improved from 626 to 765g (21.6%) and feed conversion efficiency (FCE) from 2.62 to 2.22 (15.3%). By comparison the top third of herds in the UK had a weaning to slaughter mortality of 5.7%, ADG of 711g/day and an FCE of 2.14 (3).

CONCLUSIONS

The two endemic respiratory infections (PRRSV & EP) were eliminated by partial depopulation of the herd and focussing on the vaccination (PRRSV) and medication of the breeding herd (EP). This has improved the performance of the growing herd and reduced the use of antibiotics, so that routine medication is no longer carried out. Although specific medication for APP eradication was not given, except for the combination of tiamulin and chlortetracycline in feed, both the low incidence of lesions and the higher incidence of pleurisy have improved substantially, following the eradication of PRRSV and EP. Very cold weather (-10°C) did trigger upsurges in respiratory disease and occasional outbreaks of coughing but routine antibiotic metaphylaxis was not re-introduced. Biosecurity has also been improved to reduce access to the farm by vehicles and introducing a changing facility for boots and overalls before entrance on to the farm, to try to prevent the re-introduction of infections.

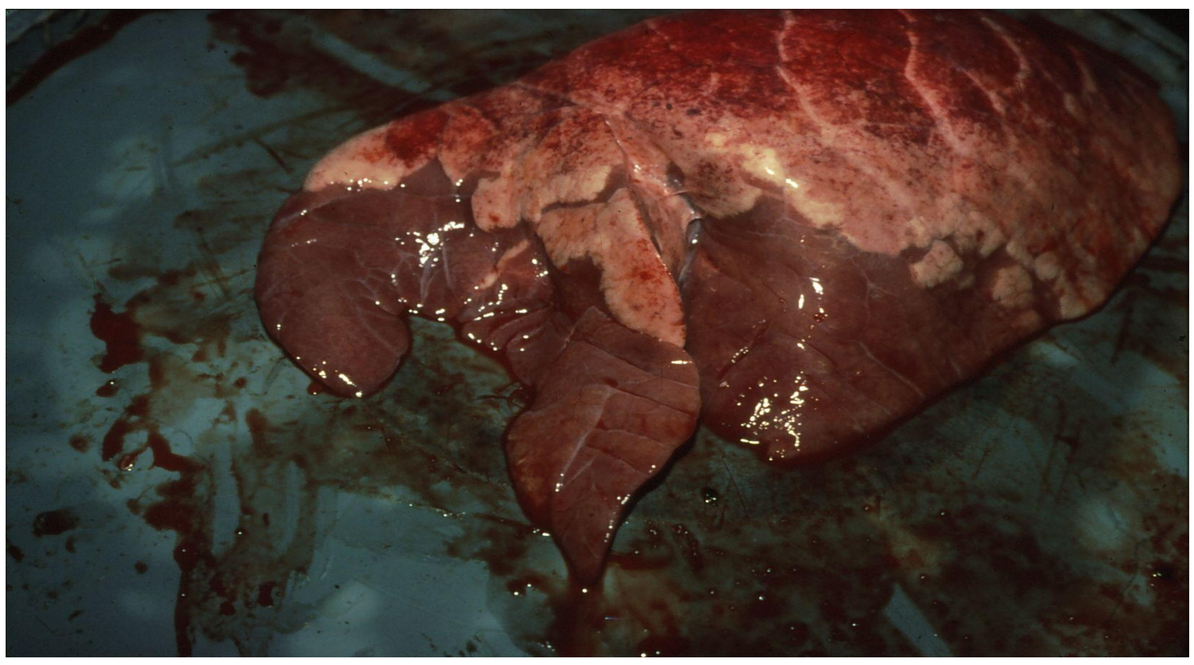

Photo 1. Enzootic pneumonia lesions

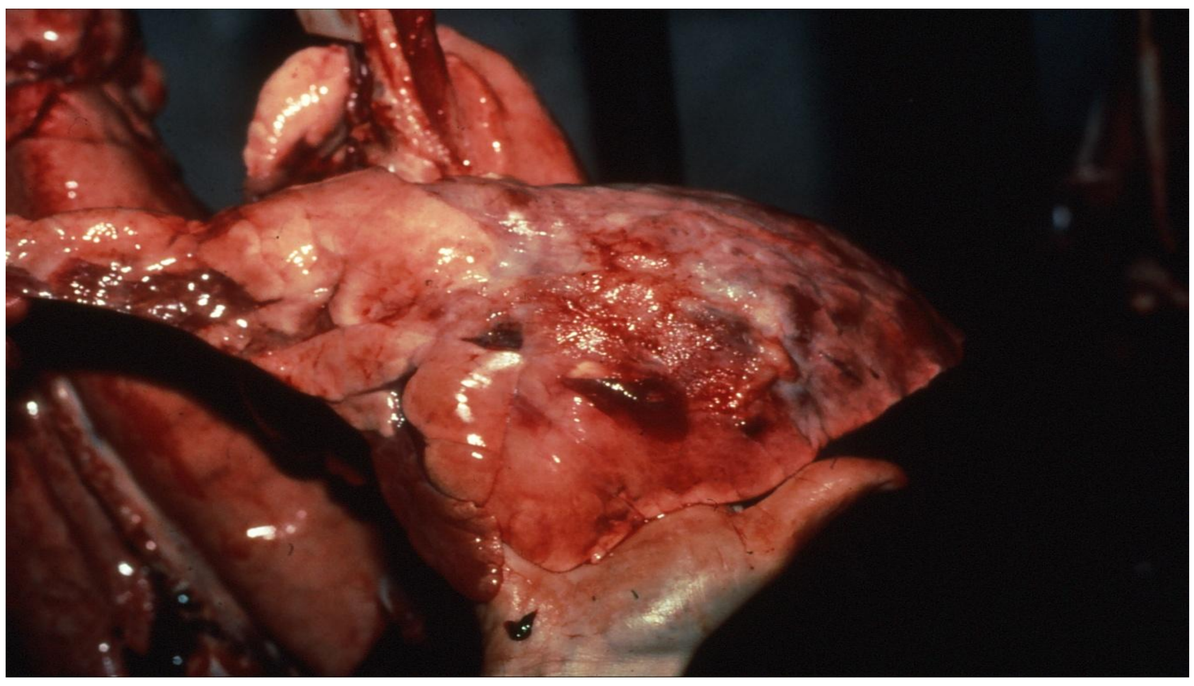

Photo 2. Pleurisy lesions on the lung surface

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