

Attempted eradication of PRRS virus, enzootic pneumonia, Actinobacillus pleuropneumonia and streptococcal meningitis

D.G.S. Burch¹, B. Bremner², C.E. O'Neill³, U. Klein⁴

¹Octagon Services Ltd, Old Windsor, Berkshire, UK, ²Donview Veterinary Centre, Inverurie, Aberdeenshire, Scotland, ³Elanco Animal Health, Basingstoke, Hampshire, UK, ⁴Elanco Animal Health, Basel, Switzerland

INTRODUCTION

The farm was a closed herd using AI and comprised 430 breeding sows. Progeny were kept until 10 weeks of age when they were sent to a second unit for finishing. The farm was infected with PRRS virus, as well as enzootic pneumonia (EP) (*Mycoplasma hyopneumoniae*), pleuropneumonia (*Actinobacillus pleuropneumoniae*) (APP) and streptococcal meningitis/arthritis (SM) (*Streptococcus suis*). The farm was planning to replace the weaning accommodation hence an opportunity arose to depopulate the farm's growing animals and to focus on eradication procedures in the breeding stock. The finishing site was also depopulated.

MATERIALS AND METHODS

Gilts at 6 months of age were stockpiled from the finishing house prior to the start of the programme. They were vaccinated against *M. hyopneumoniae* and given tulathromycin (Draxxin[®] – Zoetis) to resolve any respiratory infections and encourage lung lesions to heal. All of the breeding stock was injected with a killed PRRSV vaccine (Progressis[®] – Merial) initially and this was followed at monthly intervals with two live PRRSV vaccinations (Porcilis PRRS – MSD) (1). When all the new gilts were 10 months of age (2), the whole breeding herd was treated with tiamulin (Denagard[®]– Elanco) (3) in feed at 10mg/kg bwt for 4 weeks to eliminate *M. hyopneumoniae*. As the strain of APP was shown to be resistant to macrolides, marbofloxacin (Forcyl[®] – Vetoquinol) by injection was used to eliminate the organism in the last week of medication. A further two weeks in-feed medication was given containing trimethoprim/sulfadiazine (Trimediazine[®] – Vetoquinol) at 15mg/kg bwt to support the elimination of APP and possibly *S. suis*. Piglets were injected with tulathromycin on a weekly basis and weaned off site until the piglets from the tiamulin and TMP/S medicated sows came through. Piglets were monitored for PRRSV and *M. hyopneumoniae* by PCR. Lungs were regularly checked for lesions at slaughter.

RESULTS

Piglet tests using blood and rope saliva tests were negative for PRRSV and rope saliva tests for *M. hyopneumoniae*. Lung lesion scores at slaughter were compared from before (18/9/2013) and after the programme (19/6/2015).

Parameter	Before eradication (18/9/13)	After eradication (19/6/15)
Lung lesion score	4.91	0
APP-like lesion score (%)	6.8	0
Pleurisy (%)	36.7	7.9
Pericarditis (%)	2.0	5.9

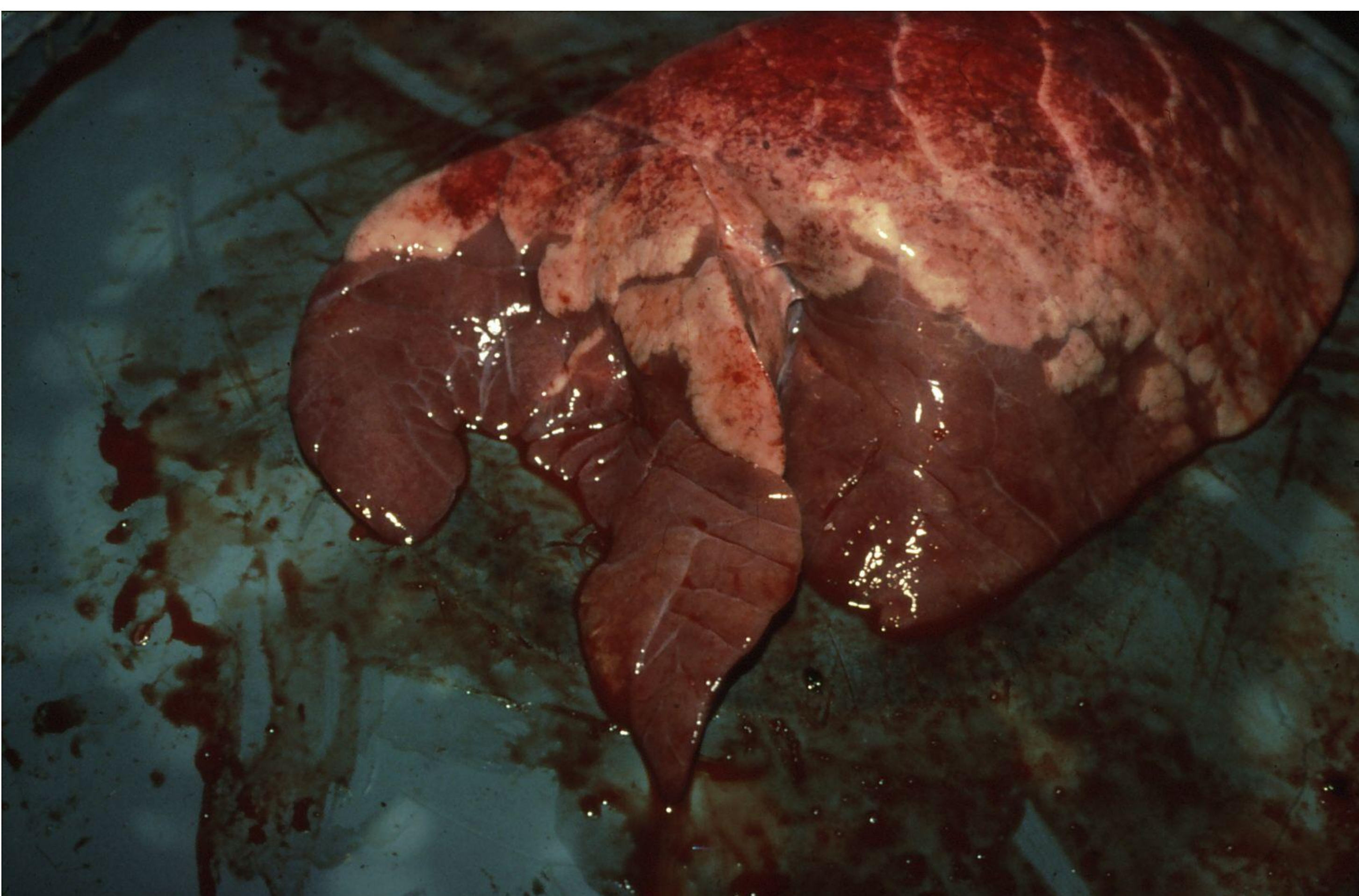


Photo 1. Enzootic pneumonia lesions

EP-like lesion scores had fallen from 4.91 to 0; APP lesions had fallen from 6.8% to 0%; pleurisy had declined from 36.7% to 7.9%; pericarditis had increased from 2% to 5.9%. The *S. suis* infection rapidly returned and is thought to account for the increased pericarditis as it still requires occasional treatment. Generally, the pigs seem to go through the system 3 weeks quicker.

CONCLUSIONS

Three common respiratory infections (PRRSV, EP & APP) were eradicated by focussing on vaccination and treatment of the breeding herd. Unfortunately, *S. suis* was not eliminated but it is notoriously difficult to do so. Antibiotic use has been markedly reduced overall. Biosecurity was also improved by restricting access to the site of vehicles by constructing a car park before the farm and personnel coming on to the unit had to change clothes and boots, to gain access. This was to try to prevent the re-introduction of infection and the programme has been successful for the last 24 months, based on on-going monitoring and clinical investigations.

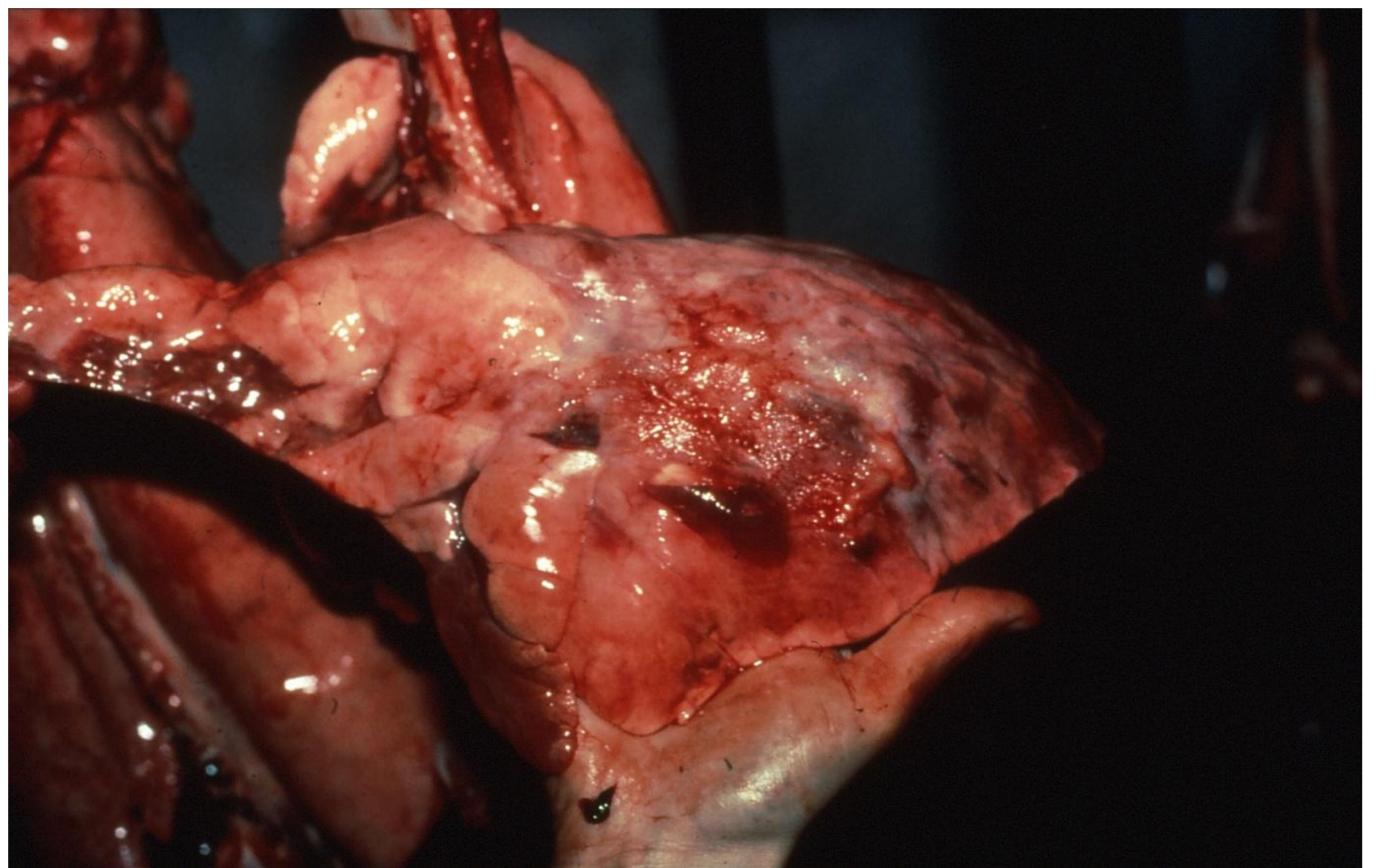


Photo 2. Pleurisy affecting diaphragmatic lobe

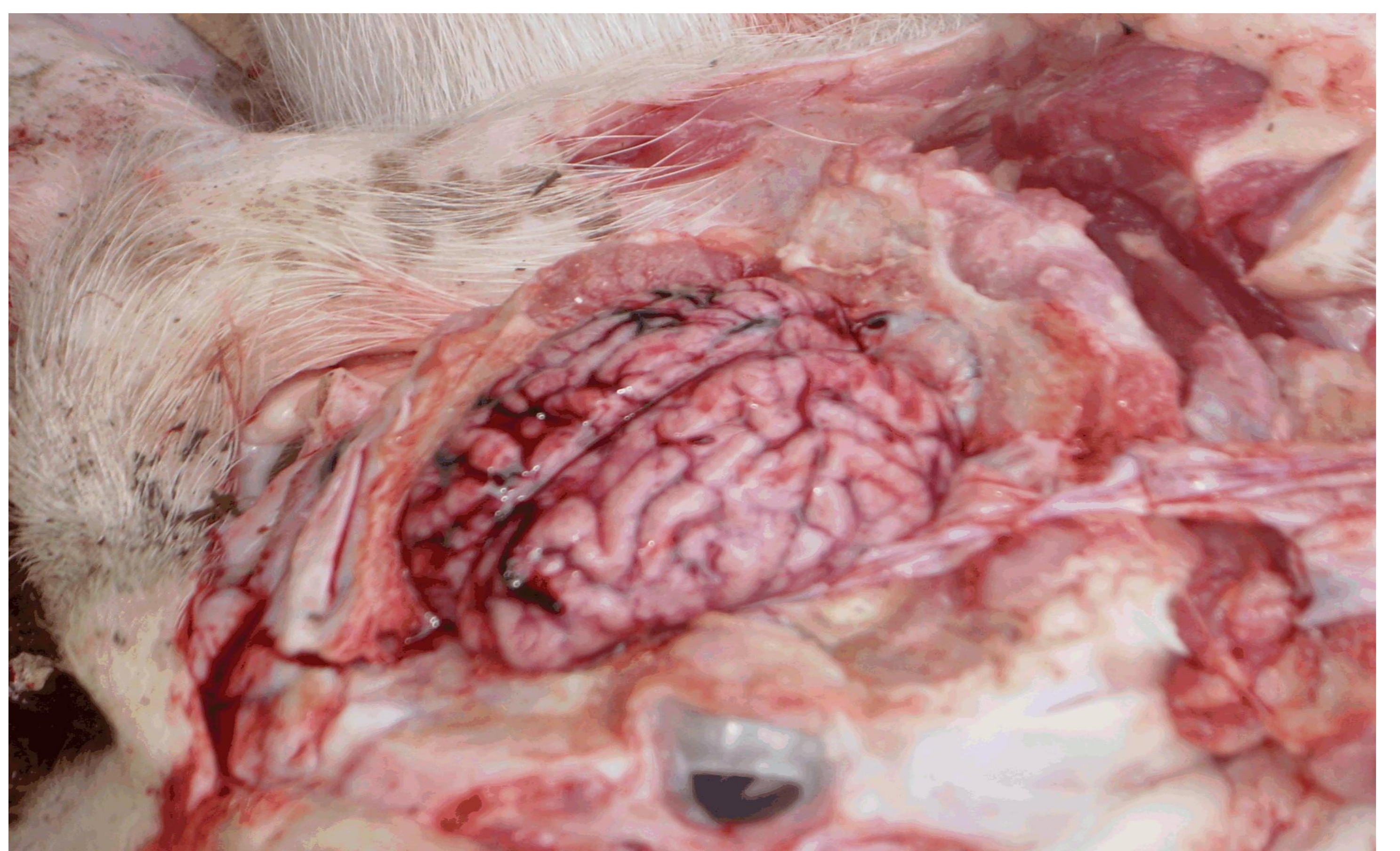


Photo 2. Streptococcal meningitis – exudate & fibrin on brain

REFERENCES

1. Burch, D.G.S. & Woolfenden, N. (2010) Proceedings IPVS Congress Vancouver, Canada, Vol 2, p 675.
2. Baekbo, P. (2006) Proceedings of IPVS Congress, Copenhagen, Denmark, Vol 1. p 313.
3. Damgaard, K. et al, (2000) Proceedings of IPVS Congress, Melbourne, Australia, p 339.