

Eradication of swine dysentery in an outdoor breeding herd and its production pyramid

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Introduction

The use of tiamulin (Denagard® - Novartis Animal Health Inc.) for the eradication of swine dysentery caused by *Brachyspira hyodysenteriae* in outdoor herds has been described (1). Herd eradication is usually planned to eliminate the infection from a chronically infected herd. The chance of success is greatest when high temperatures and dryness prevail (summertime) and at a time when the breeding herd is being moved to a new uncontaminated pasture; both will naturally assist the decontamination process. *B. hyodysenteriae* has been shown to survive in faeces and slurry for up to 60 days in cold conditions (2).

Diarrhoea was first noticed in a 1,500 sow outdoor breeding herd in mid-September 2008; the diagnosis was confirmed by FAT, and cultures from faeces samples submitted by the private veterinarian in the course of a routine visit two weeks later. The MICs for two of the isolates against tiamulin hydrogen fumarate were 0.031 and 0.125 µg/ml respectively. It was thought that the infection had originated from a nearby farm (3km) which was known to be infected.

The affected unit formed part of a 10,000 sow breeder/nursery/finisher operation comprising two separate production pyramids. Progeny was routinely co-mingled at weaning with weaners from three other unaffected breeding units. This enabled the thirteen nurseries and 23 finisher sites in the pyramid to be filled quickly; stores moved to finisher sites at about 40kg and pig flow was truly “all in/all out” by unit. After consultation, an eradication programme commenced just as reports of diarrhoea were reported in some of the nurseries, which had been recently filled. At this stage there were no reports of dysentery in the finishers.

Materials and methods

Medication programme

Breeders

The breeding herd was medicated with high levels of tiamulin (Denagard®) at 8mg/kg bodyweight for 28 days, achieved by incorporation at 800ppm in the dry sow ration and 500ppm in the lactating sow diet. Resolution of clinical signs would trigger a reduction to 5mg/kg bwt for a further 28 days’ in feed medication.

Nursery pigs

Five nurseries had been recently supplied from the breeding unit and all feed on these units was medicated

with tiamulin at 10mg/kg bwt (200ppm). A thorough cleaning and disinfection programme was introduced between batches.

Finishers

Despite the absence of clinical signs, all the finisher pigs in the pyramid, except those selecting for slaughter, were medicated in feed with 10mg/kg bwt (200ppm) tiamulin for 4 weeks. Subsequent breakdowns on finisher sites led to the belief that infection had been present for longer than initially thought. A full cycle of in-feed medication (tiamulin at 10mg/kg bwt (200ppm) for 4 weeks, reducing to 5mg/kg (100ppm) for 4 weeks) successfully eliminated the infection from all the finisher sites.

The in-feed medication regime was complimented by parenteral and water medication with tiamulin (Denagard®) in consultation with the private veterinarian to ensure rapid treatment of affected individuals.

Management

Pig flow was adjusted to separate the affected breeding unit and its progeny from all other pigs. Biosecurity procedures were reviewed and standard operating procedures tightened; risk assessments were undertaken and transport logistics were scrutinised and adjusted accordingly. Staff were advised of the situation and movement between farms was limited and controlled. Clothing changes and boots were made available on every site for visitors and disinfectant foot baths were introduced.

Results and discussion

Sows’ health improved rapidly and clinical signs resolved within a week of instigating the medication programme. October was a mild and dry month, but November was cold and wet. The clinical response was excellent on all nursery and finisher sites.

The pyramid has remained free of dysentery for over 12 months since the end of medication. Progeny from the affected unit had been considered to be the poorest in the company, but has subsequently outperformed all others (data available).

References

1. Wilkinson, J.D. (1988) Pig Journal, 21, 177-184
2. Chia, S.P. & Taylor, D.J. (1978) Proc. 5th IPVS Congress, KB57