

Eradication of *Mycoplasma hyopneumoniae* in a herd with tylvalosin (Aivlosin®)

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Introduction

The objective of the project was to eradicate *Mycoplasma hyopneumoniae* (Mh) from a 1100 sow farm combining partial depopulation of the flat decks and grow out (GO) with antibiotic treatment in the breeding animals (1). Aivlosin® was selected as the key antibiotic to perform this Mh eradication program as this new antibiotic shows mycoplasmicide activity at concentrations similar to IMC (Inhibitory Minimum Concentration) (2).

Material

The eradication started in June 2006 in a genetic nucleus farm located in northwest Spain. The farm is a Farrow to Finish unit with GO capacity for 1200 pigs including the farm's own replacements. The farm is PRRS negative and before eradication there were mild clinical symptoms of Mh in the growing animals. The program was based mainly in partial depopulation and medication.

Partial Depopulation: The Flat Decks and GO were emptied, removing from the farm all animals younger than 9 months of age except for sucking piglets. The flat decks and GO facilities were thoroughly washed and disinfected.

Piglets were weaned outside of the unit for the first three weeks of the program.

The farm's own replacement animals were also moved out of the farm into external GO where they were medicated and re introduced into the farm at 4, 6 and 8 months after starting the protocol. (last entry was on Feb 2007).

Medication: All gilts, sows and boars were in-feed medicated with 2,125 mg tylvalosin /kg LW (Aivlosin®) for 21 days, as the main element of the program.

In addition, sows that farrowed during those 21 days were injected with 9 mg Tiamulin /kg LW IM. Any sows that showed a reduction in feed intake during the medication period were injected with 2,5 mg Tulatromicin /kg LW IM (<10 % animals needed this treatment). Gilts sent to the external GO (farm's own replacements) received 2,125 mg tylvalosin /kg LW (Aivlosin®) for 21 days while feeding "ad libitum" after they reached 9 months of age (3 batches were done).

All sucking piglets older than 3 days of age were injected at the start of the program with 2,5 mg Tulatromicin /kg LW IM. For the next 3 weeks, the animals were only injected as they reached 15 days of age.

Results

During the whole treatment with tylvalosin, no reduction on feed intake was observed or any other detrimental effect.

Clinical examination: at the time of presenting this paper there are not clinical signs compatible with Enzootic Pneumonia (EP).

From January 2007 animals from this farm have been introduced into 6 units considered to be Mh free that were aware that the eradication process had not been fully completed. Those farms tested the animals at arrival and there has not been any change in their health status.

Lesions: Slaughter checks (Table 1), were done based on the Goodwin method (3). At the first evaluation post eradication, 7 lungs with EP suspicious lesions were found. The lab did not observe lesions by histopathology that would suggest infection by Mh.

Table 1: Lung evaluation at slaughter check

	Date	Nº lungs evaluated	A.L.S*
Pre eradication	Jun 02 - Oct 06	1203	12,22
Post eradication	12/12/2006	188	0,4
	08/05/2007	77	0
	21/08/2007	140	0
	27/11/2007	63	0

* ALS= Average Lung Score

Serology results: Since the eradication 294 serum samples have been taken in 19 samplings done from Oct 2006 to Nov 2007. Samples were analysed using an indirect ELISA (IDEXX) with negative results. Any doubtful sample was retested using a blocking ELISA (DAKO).

PCR has been used to test 4 lung samples from animals slaughtered at 100 kg (Nov 2006), 15 samples (tonsil swabs) from animals between 20 and 80 kg and 15 samples from animals between 60 and 100 kg housed at the external GO (Dic 2006). All results were negative.

Sentinels: In Sep 2007 30 animals from this farm were housed in contact with 12 animals coming from an EP negative source herd. Animals were housed in an external GO. No clinical signs were observed. In Nov 2007 serology was performed (similar procedure as previously described) on the 30 animals with negative result. 3 animals were euthanized and there were no lesions suspicious of EP.

Discussion

The farm is now considered to be Mh negative. The use of tylvalosin (Aivlosin®) proved to be effective for the eradication of Mh in this program.

References:

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2. Burch D.G.S. (2003) Expert Report –Efficacy Part IV.
3. Goodwin, R.F.G. et al. (1969) Journal of Hygiene, 67, 465-476.

