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A meta-analysis on Lung lesions in pigs at slaughter in Brittany (France)

Results Obtained with Different Mycoplasma Vaccines

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Introduction and Objectives

Mycoplasma hyopneumoniae (M.hyo) is the causative agent of enzootic pneumonia (EP) in pigs. Vaccination against EP has become a major tool in controlling the clinical signs and economical impact of this disease (Kyriakis, 2002). For years, vaccinating pigs with two doses has been shown to distinctly reduce *Mycoplasma hyopneumoniae* induced lung lesions. A paradigm shift occurred in 2002 when the first one-shot vaccines were introduced Europe-wide. For this purpose a meta-analysis was performed based on a broad field setting carried out from October to December 2003 in Brittany, France, involving almost 73.000 lungs.

Material and methods

The French Institute for Animal Production and agricultural food products (ISPAIA) trained seven technicians in the lung scoring technique described by Madec and Kobisch and allocated them subsequently to different slaughter plants in Brittany, France. The scoring service was offered to swine vets for elucidating efficacy of the applied *Mycoplasma hyopneumoniae* vaccine in their client farms.

Macroscopic lesions were quantified using a lung lesion score grid, as described by the French Technical Institute (ITP) (2002). The results of the individual lung scorings were amended by a questionnaire that included information on farm size, location, management techniques as well as routinely performed vaccinations. The data were analyzed by a two factorial ANOVA, applying the proc glm procedure in SAS, version 8e.

Results

Completed questionnaires were returned from 691 farms and 1220 pig batches. This represented 72% of all questionnaires sent out. The Mycoplasma vaccines used in the respective farms included six different M. hyo vaccines: two one-shot products and four two-dose products.

Lung scores of the vaccinated animals were significantly better than the unvaccinated

controls, supporting the implementation of vaccination protocols against *Mycoplasma hyopneumoniae* ($p \leq 0.05$). Both vaccine types (one-shot and two products) provided similar efficacy indicated by lesion scores (Table 1).

Table 1: Comparison between one-shot and two shot products

	One Shot	Two Shot
farms	192	236
batches	326	444
LS mean score	3.72 n.s	3.36 n.s

n.s. = not significant

The individual comparisons of the depot-one shot M.hyo vaccine and the other applied vaccines (Table 2).

Table 2: individual comparisons between the depot one-shot product and the other vaccines

Individual comparison	Significance (p)
Depot one-shot vs. vaccine A (two-shot)	Not significant
Depot one-shot vs. vaccine B (two-shot)	Not significant
Depot one-shot vs. vaccine C (one-shot)	Not significant
Depot one-shot vs. vaccine D (two-shot)	Not significant
Depot one-shot vs. vaccine E (two-shot)	$p \leq 0.05$

Discussion

Based on a meta-analysis involving more than 70.000 lungs in Brittany, vaccination against EP significantly reduces lung lesions. A depot one-shot vaccine performed equal or superior to other products.

References

- 1) Kyriakis SC, 2002, 17th IPKS Congress, Ames, Iowa (USA), Conf. Proc. Vol 2, p. 135
- 2) Madec F., Kobisch M., 1982, Journée Rech. Porcine en France 14, pp. 405-412
- 3) ITP, 2002, Lésions pulmonaires à l'abattoir