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EUROPEAN WIDE INVESTIGATION ON THE ECONOMIC IMPACT OF ILEITIS VACCINATION.

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Introduction

One of the largest surveys ever done for evaluating vaccine efficacy has been initiated in 13 European countries involving 719,000 pigs. It focuses on the economic benefit of ileitis vaccination, the influence of variables such as management, medication and feed routines.

This paper describes the material and methods of data collection, the statistics used for analysis, the first results of the economic benefit of ileitis vaccination and an updated calculated benefit.

Materials and Methods

Data from 130 herds allowed comparing 332.000 vaccinated pigs with Enterisol® Ileitis (Boehringer Ingelheim Vetmedica) with 387,000 non-vaccinated pigs. Countries included were AT, BE, CH, DE, DK, ES, GR, FR, HU, IT, NL, PO, & UK. *L. intracellularis* was confirmed in all herds using a commercial available blocking ELISA bioScreen (EVDMC GmbH) and/or PCR. 17 herds were confirmed as PHE infected and 26 herds as subclinical infected. In the other herds ileitis status was not defined. The individual farm data were gathered from either side by side trials (n = 20 herds), longitudinal studies (n = 50 herds) or field reports (n = 60 herds). Data on mortality, average daily gain (ADG) and feed conversion rate (FCR) were gathered for the entire finisher period. Additionally medication costs and carcass information were recorded when available. The economic impact of vaccination was calculated as gross margin per pig (GM, in Euro, €). The GM is described below.

$$GM = [TS - (PC+FC+MoC+ MeC)]$$

- TS (total sale) = kg slaughter weight × meat price/kg
- PC (piglet cost) = piglet price/kg × weight
- FC (feed cost) = kg feed consumed × feed price/kg
- MoC (mortality cost) = # died piglets per 100 × feed cost per pig
- MeC (medication cost) = # treatments or days of treatment per pig × price per treatment or day (*when available*)

The effects of the vaccine were assessed by ANOVA at the 5% level between means. The initial economic simulation for the GM was made based on price references average for the period July 2006–June 2007 (€ 1.41/kg pork price, € 46/piglet and € 195/Ton feed price).

Results and discussion

Overall, vaccinated pigs had a significant higher mean ADG of +35 g/day than non vaccinated pigs. The mean FCR was significantly improved by 0.07 kg/kg, and the mean mortality was significantly decreased by 1.64%. The initial simulation of the GM resulted in a positive economic impact of vaccination of € 4.01/pig (table 1).

Table 1: Mean improvement of biological performance and economic gross margin due to ileitis vaccination. (p value < 0.05).*

	<i>Mean</i>	<i>95% CI</i>	<i>N° farm</i>
ADG (g/day)	+35 *	[+26, + 45]	77
FCR (kg/kg)	-0.07 *	[-0.10, -0.04]	52
Losses (%)	-1.64 *	[-2.27, -1.01]	62
GM (€/pig)	4.01	[3.17, 4.84]	82

This initial simulation however, results in an underestimated economic impact for the current situation in pork production. For example wheat prices went up from €130/ton (Jan.07) to €250/ton (June 2008), with a peak at €340/ton (Feb. 2008, ¹). Running a new simulation with the same economic model, the same herd dataset and technical improvements but with market references from June 2008 (€ 1.70/kg pork price, € 45/piglet and € 240/Ton feed price) results in an increased positive GM of € 5.03/pig.

Conclusion

This European-wide investigation proves ileitis is one of the most damaging but often underestimated economic diseases in the pig industry. It clearly shows the benefit of Ileitis vaccination increases in even higher price markets.

References

1. www.cbot.com – Accessed July 10, 2008.