

FIELD STUDY TO ASSESS THE ECONOMIC BENEFIT OF VACCINATION WITH SUISENG® ON A PORTUGUESE FARM

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2015-0015-S
2016-736

INTRODUCTION

In some studies conducted in Europe, diarrhoea is estimated to account for 5-24% of overall pre-weaning mortality¹ and to reduce average daily gain (ADG) by 8-14 g per day². Based on these effects, the cost of neonatal diarrhoea was recently estimated to be 134 € per sow per year³. In general, most neonatal infections can be prevented by passive colostral and lactogenic immunity obtained by vaccination of the sows which are then booster vaccinated 2-3 weeks before farrowing. SUISENG® contains purified adhesion factors (F4ab, F4ac, F5 and F6) and the heat labile toxin (LT) of *Escherichia coli*, the β toxin of *Clostridium perfringens* type C and the α toxin of *Clostridium novyi*. The aim of this study was to assess the financial impact of SUISENG® vaccination under field conditions on a commercial farm located in Portugal.

MATERIALS AND METHODS

The study was carried out on a commercial farm of 800 sows in Leiria, Portugal, which had a history of high prevalence of neonatal diarrhoea in lactation period caused by *E.coli/Clostridium*. 49 clinically healthy, PRRS-positive and ADV-negative gilts were selected and divided into 4 groups, 2 of which were vaccinated (V1 n=13; V2 n=12) and 2 of which were not vaccinated (NV1 n=12; NV2 n=12), alternating in chronological order. For the vaccinated group, the vaccination protocol recommended for SUISENG® was used: 2 doses 6 and 3 weeks before farrowing. In order to assess the economic benefit of vaccination with SUISENG®, the number of piglets born and weaned (27 days) per group and per sow was recorded; the mortality rate during lactation period and the weights of the piglets at birth and at weaning were also recorded, giving the average daily gain (ADG) per group and per animal. The animals that were given antibiotic treatment for diarrhoea and the cost of this were also recorded. Taking all this together, the economic impact of vaccination with SUISENG® was assessed on the basis of the decrease in mortality rate, the increase in ADG, treatments given and the cost of vaccination.

RESULTS

Table 1. Productive parameters and neonatal diarrhoea cost per sow.*Statistical differences between groups were observed using the Mann-Whitney U test.

	Mortality rate	Mean ADG*	Antibiotic treatment	Vaccine	Cost per sow
Vac.	4.3% (12 piglets)	250 g.	-	0.27 €/piglet	14.4 €
Non vac.	47.5% (126 piglets)	202 g.	0.33 €/piglet.	-	157.5 €

Figure 1.

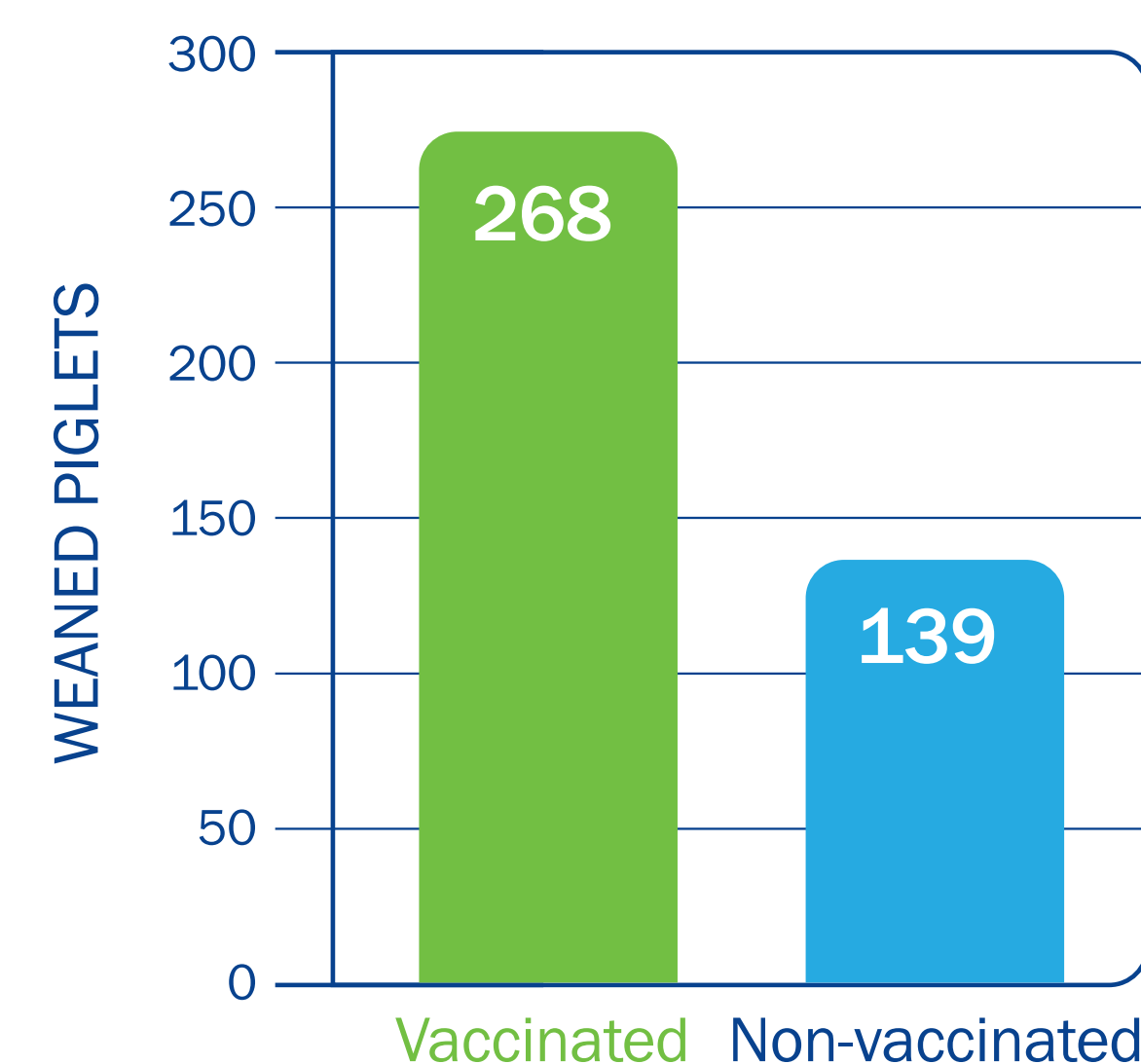


Figure 1. Number of piglets weaned at 27 days, in each group.

Figure 2.

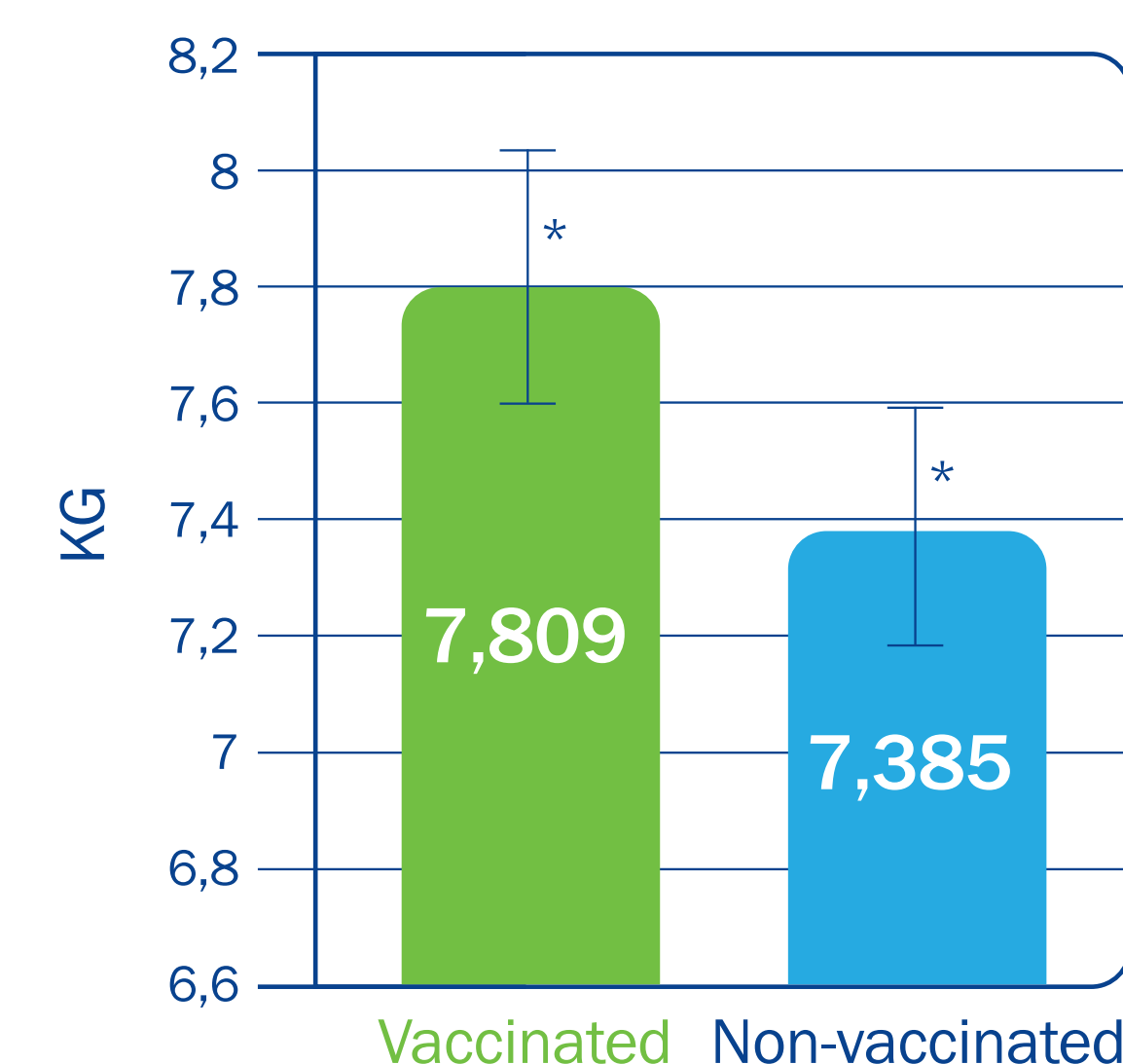


Figure 2. Average weight at weaning in each group. *Statistical differences between groups were observed ($p < 0.05$, t-test for independent samples).

With regard to mortality rates, in the vaccinated group 12 piglets died caused by crushing and handling, and in the non-vaccinated group 126 piglets died showing clinical signs of diarrhoea at necropsy. All the piglets from the non-vaccinated group were treated with amoxicillin+colistin (2 doses of 0,5ml per piglet). On the basis of these figures, in this study, the impact of an outbreak of neonatal diarrhoea caused by *E.coli* on this farm was 157.5 €/sow in the non-vaccinated group and 14.4 €/sow in the vaccinated group.

DISCUSSION

The economic benefit of vaccination with SUISENG® was demonstrated, not only because of the cost of losses caused by neonatal diarrhoea, but also because of the increased cost resulting from antibiotic treatment of animals in the non-vaccinated groups. The cost at the end of lactation was therefore reduced and the efficacy of vaccination with SUISENG® was demonstrated.

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