Effect of ileitis vaccination on fattening performance, carcass uniformity and economics in a large Spanish commercial farm

A. Palomo[1], A. López[2], J. Font[3]
[1] *Setna Nutrición, S.A., Rivas Vaciamadrid, Spain,*
[2] *Piensos Unzue, S.A., Orcoien, Spain* [3] *SIP Consultors, Prats de Lluçanès, Spain*
apyague@yahoo.com

Introduction

Ileitis or proliferative enteropathy is a common infectious disease endemic in most of Spanish farms (1). Ileitis, even in subclinical form produces a negative impact on both growth performance and farm economics. An oral ileitis vaccine against *Lawsonia intracellularis* is now approved in many countries worldwide. The aim of this study was to evaluate under field conditions ileitis vaccination impact on growth performance, carcass uniformity and economics in a large Spanish farm.

Materials and Methods

The production system was a multi-site farm with 2,500 sows located in the North of Spain. The farm suffered from sub-clinical ileitis in the fattening units confirmed by faecal PCR and ELISA. Sporadic chronic clinical ileitis cases were also observed. The seroprofile showed an early *Lawsonia intracellularis* infection pattern. The analysed data included records of 26,251 fattening pigs. One dataset was composed by records of non-vaccinated pigs (Control) and a second dataset included records of vaccinated pigs with an oral ileitis vaccine, Enterisol® Ileitis, (Vaccine). Pigs were vaccinated by trough at 4 weeks of age. In the Control group 16,692 pigs out of 13 fattening units were slaughtered during the same period of the year as the vaccinated animals. The Vaccine group included 9,559 pigs out of 6 fattening units that were slaughtered between February and April 2006. All animals were kept under similar production conditions. The monitored growth parameters for each fattening unit were: average daily weigh gain (ADWG), feed conversion rate (FCR), mortality and fattening days. An economic study was performed to analyze the effect of vaccination on both production costs and carcass value. Growth data was previously adjusted according to SIP database (Spanish 200,000 sows database). The analysed slaughter data was composed by 74 slaughter batches records of 16,280 pigs (220 animals each). In the Control group were included records of 40 batches (8,800 animals). In the Vaccine group were included records of 34 batches (7,480 animals). For each slaughter batch the percentage of carcasses classified in each grading category (EUROP grading system) and the batch percentage of lean content were available. Statistical analysis of data was performed by Statistica version 7.1.

Results

Fattening growth performance showed that vaccinated pigs both significantly increased ADWG by 60 g/d and significantly reduced the fattening period by 13 days (Table 1). In the Vaccine group FCR was reduced by 0.040 kg/kg and mortality dropped 20%. At farm level diarrhoea was not observed and better uniformity of pigs at the end of fattening was noticed in vaccinated pigs.

Table 1. Average growth performance

	Control	Vaccine	Difference
ADWG (g/d)	682[a]	742[b]	+60
FCR (kg/kg)	2.880	2.840	-0.040
Mortality (%)	5.03	4.04	-0.99
Fattening days	129[c]	116[d]	-13

[a, b] different letters indicate significant differences ($p<0.05$)
[c, d] different letters indicate significant differences ($p<0.01$)

The economic evaluation showed 3.33 €/pig as additional generated gross margin in vaccinated pigs under Spanish commercial conditions (Table 2). The return of investment (ROI) after vaccination was higher than 2.5:1.

Table 2. Economic evaluation

	Control	Vaccine	Diff.
Production cost (€/pig)	101.84	99.43	-2.41
Carcass value (€/carc.)	104.23	105.16	+0.92
Gross Margin (€/pig)	2.39	5.73	+3.33

The carcass grading analysis showed that vaccinated batches significantly increased the percentage of top graded carcasses by +14.1% (EE: 9.42% v 11.89%; $p<0.001$) (Table 3). Vaccine group significantly reduced the percentage of animals graded in a less economic valuable category by -7.4% (U: 18,34% v 16.99%; $p=0.02$). Finally vaccinated slaughter batches increased the percentage of lean content by 0.15% (56.89% v 57.04%; $p=0.397$).

Table 3. Percentage of carcasses grading categories

		Control	Vaccine	Difference	p-value
EE	%	9.42	11.89	+2.47	<0.001
E	%	59.80	58.56	-1.24	ns
U	%	18.34	16.99	-1.35	0.02
R	%	1.03	1.53	+0.50	0.005
Out	%	11.41	11.03	-0.38	ns

Discussion

In this study overall fattening performance was improved in vaccinated pigs. The carcass grading showed better uniformity at the end of fattening in the Vaccine group. After vaccination the production cost was reduced and the carcass value increased. In conclusion, vaccination with an ileitis oral vaccine significantly improved both growth performance and carcass grading producing a substantial economic benefit in a large multi-site commercial farm suffering from sub-clinical ileitis.

References

1.- Salleras, J.M. *et al.* (2006). Proc. 19th IPVS, 174.