

Ileitis and its affect on feed efficacy in pigs

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Lawsonia intracellularis leads to different forms of porcine proliferative enteropathy – also known as ileitis.

In the most common form no clinical signs like diarrhoea or sudden deaths can be observed despite pigs being infected with Lawsonia intracellularis. Infected pigs without any clinical signs show reduced weight gain, lower feed efficacy and increased body weight variation.

Based on five trials, including 191,748 pigs, focus here is given to the effect of ileitis on the reduction of the feed efficacy and the prevention of ileitis by vaccination.

Impact of ileitis on FCR

The feed conversion rate (FCR) was measured from the beginning of the finishing phase until slaughter in each of these trials. Exception was the Philippines experiment (from weaning until slaughter).

The impact of ileitis on the feed conversion rate has been assessed by comparing pigs vaccinated against ileitis using Enterisol Ileitis from Boehringer Ingelheim Animal Health GmbH with non-vaccinated controls.

	Non-vaccinated	Vaccinated	Difference
France	3.12	2.89	-0.23 (7.4%)
Germany	3.16	2.98	-0.18 (5.7%)
Spain	2.95	2.80	-0.15 (5.1%)
Philippines	2.90	2.36	-0.54 (18.6%)
USA	3.02	2.94	-0.08 (2.7%)

Table 2. Summary of the change in FCR (kg/kg) after vaccination for the five field trials.

Table 1 presents the data available in each study, and the form of the disease met.

The French survey was composed of 'GTE' records (Gestion Technique et Economique) and 2,792 animals were involved in this survey.

In Germany and Spain the collection of data was processed using statistical process control (SPC) tools. SPC tools are used to monitor and evaluate continuous processes in an existing situation.

In both farms the FCR was observed in a before/after comparison. In total 76 groups adding up to 38,510 animals were involved in the German study.

The Spanish farm involved 29,060 fatteners. In the Philippines 942 pigs were included in a side by side study (SBS) and divided into three groups.

The first two groups were vac-

nated with Enterisol Ileitis at 22 and 56 days of age. The results of the vaccinated groups were merged due to the absence of statistical difference between them. They were compared to the non-vaccinated animals. In the USA five trials were performed.

Trials one to four are contemporary controls, while trial five uses historical controls in a before/after comparison. In total, 120,444 pigs were involved.

Each field trial showed an improvement of the FCR following ileitis vaccination. It ranged from -2.65 to -18.62% (summarised in Table 2).

Rowan, 1982, found that the pathological changes due to ileitis were associated with mal-absorption of dietary amino acids.

Pigs with a thickened ileal wall

have lower digestibility of nutrients compared to normal pigs.

As a consequence, pigs with ileitis need more feed per kg weight gain than vaccinated pigs.

An economic solution

Finally, what is the economical benefit of FCR improvement? Agro-economical studies have demonstrated that an improvement of FCR by 5% equals a €2.21/pig increase of the gross margin. It is important to control the feed efficacy of pigs, especially as feed prices increase.

Corn and wheat are increasingly used for the production of renewable energy including ethanol. These resources directly compete with pig-feed and are thought to increase the feed price substantially over the next years.

Therefore, improvements in the feed conversion rate will become more and more important to ensure profits in pork production.

In conclusion, it could be shown that ileitis has a strong negative impact on the feed efficacy of pigs even in pigs without clinical signs, and vaccination against ileitis consistently improves FCR. ■

Table 1. Characteristic of the five field trials.

	Type of farm	Data type	Ileitis form
France	Farrow to finish	GTE	Subclinical
Germany	Farrow to finish	SPC	Chronic
Spain	Multi site	SPC	Subclinical
Philippines	Farrow to finish	SBS	Chronic
USA	Multi site	Meta-analysis	Subclinical