

# EFFECT OF VACCINATION AGAINST ILEITIS IN PIG HERDS WITH CONTINUOUS PRODUCTION

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## Introduction

Vaccination against ileitis caused by *Lawsonia intracellularis* (LI) has been possible in Europe since 2005, when the oral vaccine Enterisol® Ileitis Vet. was introduced. This vaccine has proven to be effective in controlling ileitis and improve production parameters in herds infected with LI (1). In practice, many herds experience reduced performance from multiple causes. The consequences of ileitis in such herds can be exaggerated by improper management practices such as mixing of pigs with different infection status as it is done in herds with continuous production systems. The present study was designed to examine the effect of vaccination against ileitis on production parameters in continuous managed herds.

## Materials and methods

The study contained 7312 pigs from 5 Danish slaughter pig herds with continuous production of pigs in weekly batches. Infection with LI in each herd was confirmed by laboratory diagnosis on affected intestines. Sixteen batches of pigs were included from each herd, and pigs from every second batch (batch 1, 3, 5, 7, 9, 11, 13 and 15) were vaccinated, whereas the remaining batches were non-vaccinated controls. Vaccinated and control pigs were kept in adjacent pens, thereby creating a high infection pressure on vaccinated pigs. In herd 1, 2, 3 and 5, the vaccine was administered at 21 days of age with a drench gun before weaning, and in herd 4 it was given at 28-35 days of age in drinking water 5 days after weaning. Before the trials started, a serological analysis by ELISA (2) of each farm was executed 6 weeks after the proposed age for vaccination to confirm the correctness of timing of vaccination. For comparison of the performance in the vaccinated pigs with controls, the following parameters were used: Days from weaning to slaughter, average daily weight gain (ADWG), carcass weight and lean meat %. For herd 1 and 2, the mortality during the fattening period was recorded. Comparisons were carried out with paired Students t-test with significance level  $p \leq 0.05$ .

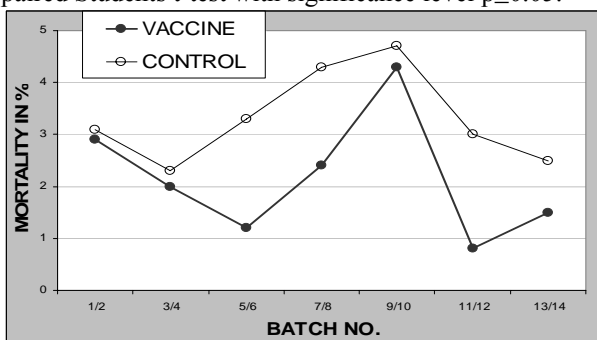


Fig. 1: Mortality in the fatteners vaccinated against ileitis compared to non-vaccinated control. Batches corresponding in time are pictured above each other.

## Results

The mean mortality in the fattening barn was 2.1% in vaccinated batches compared to 3.3% in non-vaccinated batches (fig. 1). Vaccination resulted in an increase in ADWG of the individual pigs between 24 and 48 g/day (mean 30 g) (fig. 2) and the number of days from weaning to slaughter was reduced between 3 and 16 days (mean 6 days) for herd 1-4, but no effect was seen in herd 5. Vaccinated pigs had a significant increase in lean meat % in herd 1 and 2 (0.4 % and 0.8 %), but not in herd 4 and 5 (fig. 3). The overall mean of the carcass weight was increased by 1.3 kg after vaccination, and this difference was significant, too.

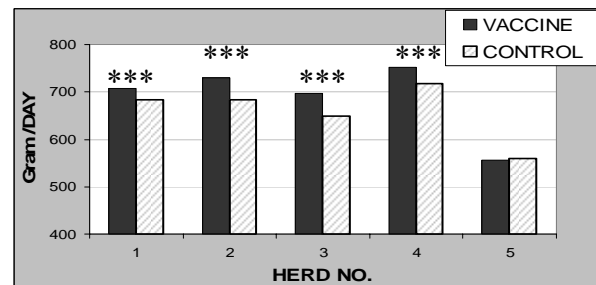


Fig. 2: ADWG in vaccinated and non-vaccinated pigs.

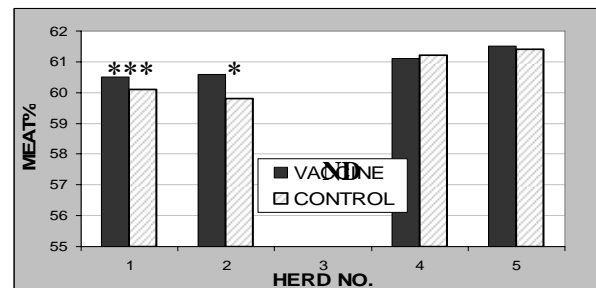


Fig. 3: Meat % in vaccinated and non-vaccinated pigs. \*\*\* =  $p < 0.0001$ . \* =  $p < 0.05$ . ND = no data available

## Discussion

This study clearly demonstrates that herds with ileitis in continuous production systems can benefit from vaccination against ileitis. The vaccine was highly efficacious in 4 out of 5 herds. Herd No. 5 had an extremely low ADWG; a reinfection with *M. hyopneumoniae* was revealed afterwards, which probably prevented a measurable effect of the vaccine. Finally it can be concluded that the study showed a significant positive effect on days to slaughter, ADWG and slaughter weight, and the lean meat % increased in herds with low lean meat %.

## References

1. Hardge, T. et al. (2004): Pig J. 54, 17 - 34
2. Boesen et al. (2005): Vet. Microbiol. Vol. 109, Issues 1-2, 105-112