

CHALLENGES AND SOLUTIONS IN A LARGE SCALE ILEITIS FIELD TRIAL IN PRODUCTION FARMS

PH Rathkjen and H Bak

Boehringer-Ingelheim A/S, Strødamvej 52, 2100 COPENHAGEN, Denmark

e-mail: pra@cop.boehringer-ingelheim.com

Introduction

This paper describes an experimental design made to meet the challenges of getting sufficient and reliable data from a large amount of pigs. The design was used in a large clinical trial with vaccination against ileitis with Enterisol® Ileitis Vet. which was introduced in Denmark in August 2005. Comparison of efficacy reports collected from herds before and after vaccination showed an increased ADWG and a decrease in mortality and FCR after vaccination. However, such reports could leave doubts about whether the effect was due to the vaccine or originating from other changes made in the herds over time. A clinical trial was set up to confirm the results from the efficacy reports, and the experiences from this trial are described here.

Materials and methods

Initially, the study included pigs from 9 large sow herds (> 500 sows), and pigs were followed from weaning to slaughter. In each herd, every second batch was vaccinated, giving rise to pairs of observations presumably identical in all respects but vaccination. From each herd, 16 batches were included, and pigs from batch 1, 3, 5, 7, 9, 11, 13 and 15 were vaccinated. Vaccination age was 6 weeks before seroconversion to *Lawsonia*. A combination of farmer recordings on batch level (weaning date, mean weight at weaning, mortality and antibiotics), and internet collected data from a slaughterhouse database on the pig level (date of slaughter, carcass weight and lean meat %) was used. To identify pigs and connect individual slaughterhouse data to batch data, every batch received different coloured ear tags. Every colour corresponded to a specific slaughter delivery No., and 6 colours were used repeatedly in a cycle.

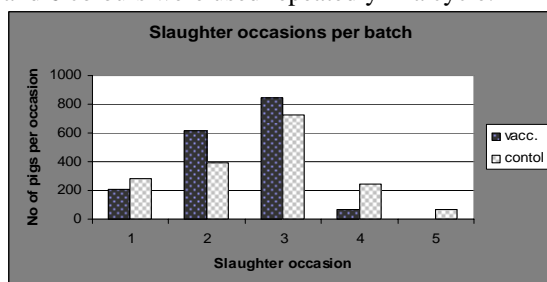


Fig.1: Slaughter occasions and pig distribution.

Results

Infection with *Lawsonia intracellularis* initially was confirmed in all herds, but in 2 herds it turned out that the infection was at a very low level during the trial and they were excluded from the trial. Hence, the study actually only contained pigs from 7 sow herds, with an average batch size at weaning

of 625 piglets. The first challenge was to keep track of the pigs. For the herds with sectionized production, registrations made on the batch level (mortality and antibiotics) were of good quality, but for herds with continuous production, most recordings were useless. The use of 6 colours created for the farmers a 6 weeks interval to slaughter one batch of pigs before using the same colour again. However, surprisingly it turned out that pigs marked with the same colour of earmark but originating from different batches were slaughtered at the same occasion. Therefore, many individual data had to be excluded. In one herd, batches and data was mixed to such a degree, that all data was discarded. Besides the problems with intermingling of batches on the farm level, the internet based system; www.Landmandsportalen.dk was valuable for collection of data from individual pigs. The thorough registrations gave also a possibility for registrations other than intended, such as the number of pigs per slaughter occasion. Fig. 1 shows an example from a herd, where the pigs from each batch were slaughtered over several weeks. It shows that vaccinated pigs meet the optimum slaughter condition in a more concentrated period than non-vaccinated pigs and confirms the higher uniformity of vaccinated pigs, claimed in the vaccine SPC. Vaccination of every second batch was very useful. All farms experienced fluctuation in production results. Fig. 2 shows the cost of antibiotics in vaccinated and non-vaccinated batches. Costs of antibiotic increased in both groups, but the difference between vaccinated and non-vaccinated batches remained constant.

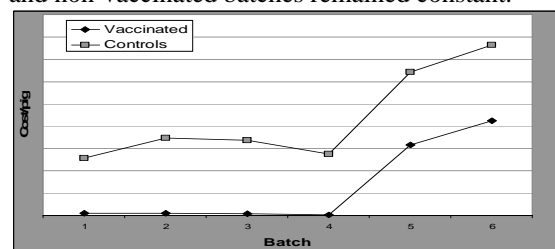


Fig.2: Relative cost of antibiotics in vaccinated and control pigs. Disease outbreaks hit both groups.

Discussion

This investigation demonstrated that a trial model based on consecutive vaccinated and non-vaccinated batches is useful for clinical trials, when a true side by side model is not applicable. Data obtained confirm experiences from before and after comparisons, and the doubts arising from such data are ruled out, as disease outbreaks or management changes has the same influence on vaccinated and non-vaccinated batches in this study design.