Sponsors

University of Minnesota
College of Veterinary Medicine

College of Agricultural, Food and Environmental Sciences

Extension Service

Swine Center

Editors
W. Christopher Scruton
Stephen Claas

Layout
David Brown

Logo Design
Ruth Cronje, and Jan Swanson;
based on the original design by Dr. Robert Dunlop

Cover Design
Shawn Welch

New evidence for extended duration of protection of Ingelvac® M.hyo

M. Genzow[1], C. Lasagna[2], T. Hardge[1], J.Kolb[3]
[1]Boehringer Ingelheim Animal Health GmbH, Ingelheim, Germany
[2]Fratelli Martini & C. S.p.A., Budrio di Longiano (FC), Italy
[3] Boehringer Ingelheim Vetmedica Inc, USA

Introduction and Objectives

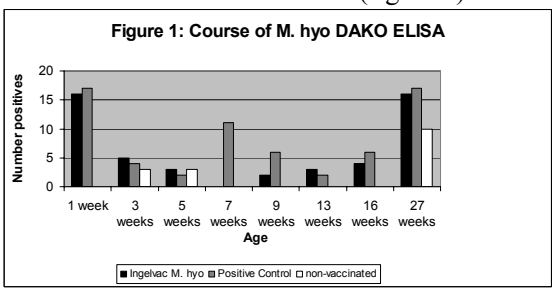
Vaccination against Mycoplasma hyopneumoniae (M.hyo) has become a major tool in controlling the clinical signs and economical impact of enzootic pneumonia (1, 2). Ingelvac® M.hyo, an innovative one-shot vaccine has been shown to provide superior efficacy as compared to two-dose vaccines (3, 4), a distinct stimulation of cellular-mediated immunity (5) and a rapid onset of protection of 2 weeks (6). The objective of this study was to investigate the duration of immunity in response to vaccination with Ingelvac® M.hyo when given to 3-week-old piglets in comparison to a positive control (piglets vaccinated on day 8 of life with a competitive commercially available one-shot vaccine) as well as to unvaccinated negative controls.

Materials and Methods

The trial was carried out in a commercial farrow-to-finish farm in Italy. A total of 531 piglets of two farrowing batches were randomly allocated to two vaccination groups receiving either Ingelvac® M.hyo at 3 weeks of age or another one-shot vaccine at 8 days of age. Non-vaccinated pigs were kept as negative controls to confirm M.hyo circulation in the farm. In order to eliminate possible time effects the study was run in two phases. The primary parameter for efficacy was the lung lesion score (7); which was evaluated in 100 randomly selected animals from each of the vaccinated groups at slaughter. Furthermore, production parameters such as mortality (%), weight gain and days to market were analysed. A total of 10 blood samples per group at different time points were taken and specific antibodies against M.hyo were measured using the M.hyo DAKO ELISA. The data were analysed using non-parametric Kruskal-Wallis-Test statistics (SAS, version 8e).

Results and Discussion

A total of 282 pigs were vaccinated with Ingelvac® M.hyo, 239 pigs were vaccinated with the competitor product, 10 animals served as non-vaccinated controls. A total of 268 animals of the Ingelvac® M.hyo group and 229 animals of the control group reached slaughter weight (approx. 160 kg body weight within approx. 37 weeks). Seroconversion as evidence for a clinically relevant infection occurred in average around week 27 when the non-vaccinated group showed distinct seroconversion (figure 1).



With regard to the primary parameter of efficacy the lung lesion scores were organised into four classes (scores 0-7 :class I, 8-14: class II, 15-21: class III and 22-28: class IV) and pairwise comparisons were performed between the groups. The statistical analysis revealed a significant difference between the two vaccinated groups and the non vaccinated group for lung lesions with mean scores of 2.16 for the Ingelvac® M.hyo group, 2.21 for the positive controls and 4.5 for the non-vaccinates ($p \leq 0.05$). The lung lesions, mortality, weight gain and days to market were not statistically significant different between the two vaccinated groups. However, the daily weight gain of the non-vaccinated animals was significantly lower than both of the vaccinated groups ($p \leq 0.05$).
In conclusion, based on a positive and negative controlled clinical field trial, Ingelvac® M.hyo provided protection of 34 weeks post vaccination.

References

1) Kyriakis SC, 2002, 17th IPVS Congress, Ames (USA), Conf. Proc., Vol. 2, p.135.
2) Tessier P, Lacladère, S, 2004, 18th IPVS Congress, Hamburg (Germany), Conf. Proc., Vol. 1, p. 240.
3) Hardge, T., Genzow, M., 2003: Pig International 33, 11 - 12
4) Kolb J et al., 2004, 18th IPVS Congress, Hamburg (Germany), Conf. Proc., Vol. 2, p.593.
5) Roof M et al., 2001, AASV, Conf. Proc., pp. 163-167.
6) Roof M, Kolb J, 2004, 18th IPVS Congress, Hamburg (Germany), Vol. 1, p. 227.
7) Madec F, Kobisch M, 1982, Journée Rech. Porcine en France 14, pp405-412.