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Effect of sow and piglets vaccination against *Mycoplasma hyopneumoniae* on serology and lung quality

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Introduction

Early infections with *Mycoplasma hyopneumoniae* (M. hyo) in the nursery are described in different studies (1, 3, 4). Furthermore, in farms with PMWS problems, the early vaccination against M. hyo is considered to prevent PMWS (1), therefore the vaccination of the sow could possibly protect piglets very early.

Materials and methods

The study contained 423 piglets from a farm with 550 sows. Blood samples were taken in week 1, 3, 9 and 20 and analysed with an ELISA (HerdCheck M. hyo, IDEXX) for M. hyo specific antibodies. At slaughter the lungs were scored. Five different groups were formed (Table 1). In group 1 sows were vaccinated 3 weeks a.p. with Stellamune One® (Pfizer). Piglets in this group were vaccinated on day 21 with a One-Shot vaccine. In group 2 sows were also vaccinated. Piglets in this group were vaccinated on day 4 and day 21 with Stellamune Mycoplasma® (Pfizer). In the groups 3 and 4 sows were not vaccinated. Piglets in group 3 were vaccinated with the One-Shot vaccine on day 4, those in group 4 were vaccinated with the Two-Shot vaccine on day 4 and 21. In group 5 only sows were vaccinated, the piglets were not vaccinated against M. hyo.

Tab. 1: Groups and vaccination status of sows and piglets

Group	1	2	3	4	5
sows	One-shot	One-Shot	/	/	One-Shot
piglets	One-Shot	Two-Shot	One-Shot	Two-Shot	/
n	89	99	91	84	60

Results

No decrease in general health or any local reaction could be seen after vaccination of the sows or the piglets. The lung score of all piglet groups that were vaccinated was significantly lower than in group 5 (Figure 2). Furthermore piglets in group 3 had a significantly lower average lung score than animals of group 1. The vaccination of sows had no influence on the humoral immune response of the piglets. In week 20 no difference between groups 1, 2, 3 and 4 could be seen. The number of piglets that had not seroconverted until week 20 was higher in group 5 than in the other groups.

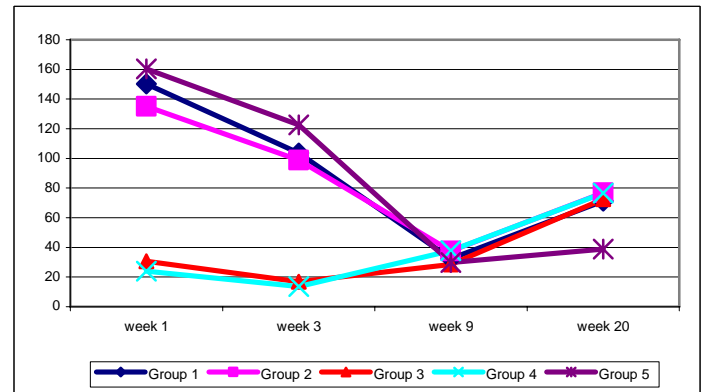


Fig. 1: Mean antibody titre (% of positive control) for all groups

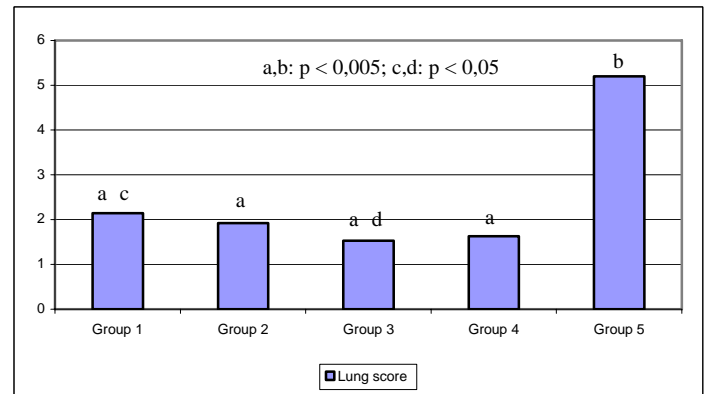


Fig. 2: Mean lung score and significances between the different groups

Discussion

The results show the positive effect of piglet vaccination with an inactivated M. hyo vaccine. Furthermore vaccination of the sows had no negative influence on the effect of piglet vaccination. It is not clear if the finding of humoral antibodies against M. hyo is associated with the protection against M. hyo induced pneumonia. The cellular immune response is more important than the humoral immune response (2). On this farm vaccination of the piglets had a significant effect on lung health. Further studies need to be done to evaluate the effect of sow vaccination against M. hyo.

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