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**Influence of maternal antibodies on *Mycoplasma hyopneumoniae* vaccines**  
**M. Ritzmann, K. Lillie, A. Palzer, K. Heinritzi**  
**Clinic for Swine, Ludwig-Maximilians-University Munich, Germany**

**Introduction**

Early infections with *Mycoplasma hyopneumoniae* (M. hyo) in the nursery are described in different studies (1,4,5). Furthermore, in farms with PMWS problems, the early vaccination against M. hyo is considered to prevent PMWS (1). The objective of this study was to examine the influence of maternal antibodies on the vaccine response.

**Materials and methods**

The study contained of 1324 animals which were vaccinated on three different occasions. The study was done in a closed farm with 120 sows. Five different groups were built. Group 1 was vaccinated with Stellamune One® (Pfizer) in the first week of live (day 4), group 2 was vaccinated on day 26 with Stellamune One®, group 3 was vaccinated on day 4 and 26 with Stellamune Mycoplasma® (Pfizer), group 4 was vaccinated on day 90 with a one shot vaccine and group 5 was the unvaccinated control group. All pigs were followed up until slaughter. The response to the vaccine was assessed by examining humoral immune response (HerdCheck M. hyo, IDEXX), fattening performance data and lung scores. In the ELISA results < 30% are negative, 30% – 40% are suspicious and results >40% are positive. The antibody titre course was analysed during the time after vaccination. The piglets of each group were divided according to the antibody level, on day 4, into maternal positive and maternal negative animals.

**Results**

No decrease in general health or any local reaction could be seen after vaccination. There was no significant difference in the lung quality and the fattening performance of piglets with positive and negative antibody titres within the vaccinated groups. A significant difference in the antibody titre development could be observed during the time after vaccination. This occurred in groups 1 and 2 and in the Two-Shot-Vaccine group. The antibody titre of piglets from sows with a negative maternal antibody titre showed a significantly larger increase compared to those from sows with positive maternal antibody titre (Fig. 1 and 2). No significant difference was found in the group that was vaccinated 90 days after birth.

**Discussion**

The results show the positive effect of a vaccination with an inactivated M. hyo vaccine. The development of humoral antibodies in piglets with high or low antibody titres on day 4 might be due to

Figure 1: Antibody titre (% of positive control) for all groups, piglets with positive maternal titre

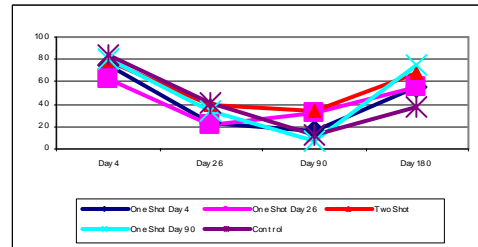
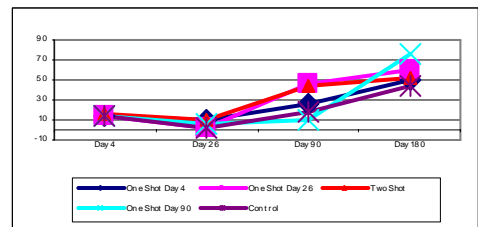


Figure 2: Antibody titre (% of positive control) for all groups, piglets with positive maternal titre



an interference of maternal antibodies with the humoral immune response, because maternal negative piglets seroconverted earlier than maternal positive animals. This effect is described by other authors (2). It is described that the cellular immune response is more important than the humoral immune response (3). To evaluate the effect of the vaccination against M. hyo, results of the fattening performance and lung scores are very important. For these parameters no significant differences between piglets with high and animals with low antibody titres, on day 4, could be detected.

**References**

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