

**Title:** Prevalence of *Mycoplasma hyopneumoniae* in different parity sows as a preliminary tool for eradication - **NPB # 02-081**

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**Date Received:** May 27, 2003

**Abstract:** The objective of this study was to establish the prevalence of *Mycoplasma hyopneumoniae* (*M. hyopneumoniae*) in different parity sows using nested PCR (NPCR) and scanning electron microscopy (SEM). Additionally, blood samples were collected to analyze antibodies to *M. hyopneumoniae* with a monoclonal blocking enzyme-linked immunosorbent assay (ELISA). This study was conducted in 44 sows from a farm endemically infected with *M. hyopneumoniae*. Sows were assigned to groups of 15 animals each by parity: group I (parity 0-2), group II (parity 3-5) and group III (parity 6 or more). At slaughter, blood samples were collected to measure antibodies to *M. hyopneumoniae*. An approximately one-centimeter section of trachea at the bronchial bifurcation was obtained for SEM and a swab was collected from the bronchus at the right apical lobe of the lung for NPCR.

NPCR results showed statistically significant differences between groups I, II, and III, with group I having a higher prevalence of positive animals. SEM results between groups showed a tendency to have structures less compatible with *M. hyopneumoniae* with increasing parity ( $p = 0.0947$   $p < 0.05$ ). ELISA results showed a gradual decrease on the antibody levels with increasing parity. Group I sows presented a higher *M. hyopneumoniae* prevalence (18%) by SEM and NPCR compared to groups II and III sows, (2% and 9% respectively). In addition, this study showed a significant agreement ( $p < 0.05$ ) between NPCR and SEM in the detection accuracy of *M. hyopneumoniae*.

These results suggested that group of sows between 0 and 2 parities should be considered as a risk factor to disseminate mycoplasmal respiratory disease. Also, the study found the presence of positive sows in groups II and III by SEM and PCR, although no antibodies were detected in any sow from group III. These results confirm earlier hypothesis showing that ELISA negative results may be found in infected older animals, suggesting a probable cause for failures in some eradication programs. It also suggests that the 10 month-old cut-off point widely used in European eradication programs, may not work well in SEW farms.

*These research results were submitted in fulfillment of checkoff funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer reviewed*

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