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TITLE

DETECTION OF MYCOPLASMA HYOPNEUMONIAE BY RT-PCR IN ENVIRONMENTAL SAMPLES

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CONTENT

Background and Objectives. *Mycoplasma hyopneumoniae* (Mhyo) causes enzootic pneumonia, one the most important diseases for the swine industry worldwide. Although Mhyo transmission occurs mainly by direct contact, other indirect transmission routes have been described. However, the role of indirect transmission via environmental contamination remains poorly understood. Therefore, this study attempted to detect Mhyo in environmental samples in farrowing rooms.

Material and Methods. Three Mhyo positive herds (A, B and C) with different status were selected: farms A and C were subclinically infected, whereas farm B was clinically affected. At each farm, the following samples were collected: 1) Air: using a cyclonic collector (CC) for 30 minutes; 2) Deposition particles (DP) from 1 meter of aluminum foil during 1 hour; 3) Nose, udder and vagina skin from dams using an impregnated gauze with PBS (GD); and 4) Stalls (feeders, stall rods, flooring) using wipes with PBS (WS). This sampling was repeated in three rooms per farm (n=51), obtaining a total of 153 samples which were tested for Mhyo by real time (rt)-PCR. Those with cycle threshold³⁷ were considered positive.

Results. Forty out of 153 (26%) samples resulted Mhyo positive by rt-PCR. The highest percentage of positive samples was obtained by CC 33% (3/9), followed by 30% in WS (16/54), 28% in GD (15/54) and 17% in DP (6/36). Farm B showed the majority of positive samples (10%, 36/51) corresponding to different samples types (3/3 CC; 6/12 DP; 12/18 GD and 15/18 WS). Detection in farm C was 6% (2/18 GD and 1/18 WS), whereas 2% of samples were positive (1/51 GD).

Discussion and conclusion. Results showed Mhyo can be detected from different environmental samples within positive farms. Further research is needed to identify the role of environmental contamination in Mhyo transmission and its potential usage as sampling method to monitor Mhyo.