

# Survey on *Mycoplasma hyopneumoniae* gilt acclimation practices in Europe

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## Key Points

- Gilt acclimation for *M. hyopneumoniae* is considered a crucial aspect for downstream respiratory disease control
- *M. hyopneumoniae* gilt acclimation was practiced in more than 75% of the surveyed farms
- Confirmation of the effectiveness of the *M. hyopneumoniae* acclimation process was not a common practice among the farms participating in this investigation

## Background

Gilts are considered to play a key role in *Mycoplasma hyopneumoniae* (*M. hyopneumoniae*) transmission and control. An effective gilt acclimation program should ideally reduce *M. hyopneumoniae* shedding at first farrowing, decreasing pre-weaning colonization prevalence and potential respiratory problems in fattening pigs. However, information on gilt acclimation practices is scarce. The aim of this study was to identify current acclimation strategies for *M. hyopneumoniae* in Europe.

## Methods

The survey on *M. hyopneumoniae* European gilt acclimation practices was based on a questionnaire, which was submitted to swine veterinarians across Europe. Each questionnaire represented data from one single farm and was counted as such. The questionnaire included 15 questions, 10 of them closed (e.g. yes/no or multiple choice questions) and 5 semi-closed (e.g. days of exposure to the acclimation strategy). In the first part of the questionnaire, information related with the production system and herd size was requested. In the second part of the document, questions were focused to four main topics: *Farm status in regards M. hyopneumoniae* infection, *Gilt replacement origin and status*, *Acclimation strategies and timing*, and *Methods used to assess the effect of acclimation strategies*.

## Results

A total of 321 questionnaires, representing 321 farms, were voluntarily completed by 108 veterinarians, from 18 European countries. From these farms, 280/321 (87.2%) were aware of the health status of gilts on arrival. From these 280 farms, 161 (57.5%) introduced *M. hyopneumoniae* positive replacements. In addition, 249/321 (77.6%) farms applied an acclimation process using different strategies, being *M. hyopneumoniae* vaccination (145/249, 58.2%) and the combination of vaccine and exposure to sows selected for slaughter (53/249, 21.3%) the most commonly used. Notwithstanding, only 53 of 224 (23.6%) farms, knowing the *M. hyopneumoniae* initial status and performing acclimation strategies against it, verified the effect of the acclimation by ELISA (22/53, 41.5%), PCR (4/53, 7.5%) or both (27/53, 50.9%). This study showed that three fourths of the farms represented in this European survey have *M. hyopneumoniae* acclimation strategies for gilts, and one fifth of them verify to some extent the effect of the process.

## Discussion

Most of the questionnaire respondents reported that the assessment of *M. hyopneumoniae* associated problems was based on presence of clinical signs accompanied with lung lesion scoring at slaughterhouse. Noteworthy, non-productive dry coughing and cranio-ventral pulmonary consolidation (CVPC), the usual clinical signs and lung lesions attributed to *M. hyopneumoniae* infection, can also be produced by other respiratory pathogens, and these parameters do not allow detecting a potential sub-clinical infection. In consequence, clinical disease assessment should be supplemented with the laboratory confirmation of *M. hyopneumoniae* involvement in clinical signs and lesions. A total of 151 out of 320 (47.1%) farms in which *M. hyopneumoniae* status was evaluated based their assessment only on non-specific methods (clinical signs or lung lesions scoring at abattoir), suggesting that most European farms represented in this study performed an incomplete assessment of *M. hyopneumoniae* health status.

The introduction of external replacement into a swine herd is considered a potential risk of new pathogen introduction and farm health destabilization, as well as for becoming infected or re-infected with different strains. However, more than 40% of the evaluated farms purchased external replacement, being in most of the cases seropositive against *M. hyopneumoniae*. Comparatively, percentage of positive replacement in the assessed European farms was similar (161/280, 57.5%) to that in the USA (55%), but lower than in Mexico (90%). Interestingly, most farms (80.9%) had isolation facilities to acclimate, with AIAO being the most utilized system.

Replacement gilt acclimation methods used in Southern European farms were mainly based on vaccination alone or in combination with live animal exposure (culled sows or pigs), whereas farms from the rest of participant countries utilized vaccination exclusively. However, current vaccines against *M. hyopneumoniae* are not able to prevent bacterial colonization and the transmission between vaccinated pigs seems not to be significantly altered.

Finally, the relatively low percentage of farms verifying the acclimation process (23.7%) indicated that most of the surveyed farms did not evaluate gilt infection and shedding status at first farrowing. This situation coincided with the information reported by Mexican and North American studies, where only 20% and 14% of responders, respectively, validated the acclimation process. An inadequate acclimation process could imply that gilts would be a potential source of infection to their offspring and, therefore, leading to an outbreak of *M. hyopneumoniae* in seronegative farms or *M. hyopneumoniae* re-circulation/re-infection in seropositive ones.

## Conclusions

The present study shows that most of the European farms introduced *M. hyopneumoniae* positive replacement stock, but only a minority assessed its health status on arrival. Likewise, most of participating farms performed a specific gilt acclimation procedure against *M. hyopneumoniae*. Moreover, the verification of this process was not a common practice.

## Link to Paper summarized here

<http://umnswinenews.com/2017/08/28/what-are-the-acclimation-practices-for-mycoplasma-hyopneumoniae-across-the-eu/>