

Additional insights from collaborators:

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Before exposure can take place, it is necessary to prepare a lung tissue homogenate from a donor pig that is likely to contain infectious *Mycoplasma hyopneumoniae* and is not responsible for introduction or spread of other pathogenic microorganisms. It is recommended that the donor pig(s) have the lowest possible PCR threshold cycle (Ct) from deep-tracheal secretion (DTS) sample and should be from the herd to be exposed. The amount of *M. hyopneumoniae* genetic material in a final lung homogenate is directly related to the ante-mortem DTS sample Ct value. A detailed methodology for producing lung homogenate containing infectious *M. hyopneumoniae* has been published and subsequently improved upon but do not require advanced laboratory techniques for success. Storage conditions but not dilution solution have been observed to affect the infectiousness of the homogenate preparation used for exposure.

Intratracheal inoculation of all or a portion of pigs may be used to achieve exposure. Alternatively, clinically affected (coughing) pigs may be used for exposure. Infected pigs used to expose the remainder of a population are referred to as seeders whether derived through an active or passive process. The seeder approach is appropriate when pigs are in group housing. When using seeder pigs, it is important to remember that less than 1 pig (0.77) is infected weekly when exposed to 1 shedding seeder. Therefore, it is necessary to individually identify seeders to ensure an adequate number remain in contact with the susceptible population until transmission and infection can occur. If opting to use seeders to achieve exposure, the ratio of seeder-to-naïve should be based on the desired time to achieve complete exposure of the group, farm, or herd.

Because of the slow and variable transmission rate of *M. hyopneumoniae* using seeder pigs, practitioners have begun *M. hyopneumoniae* exposure by aerosolization. This method disperses *M. hyopneumoniae* in the environment at a single time point and overcomes the need for direct contact thus can be used in small or single pen housing systems. In addition, this method has been shown to have a lesser impact on weight gain. However, age of the population may impact the success of aerosolization exposure.