

## Mycoplasma-associated Arthritis

*Mycoplasma hyosynoviae* and *Mycoplasma hyorhinis* cause arthritis in swine. The Iowa State University Veterinary Diagnostic Laboratory reported that the diagnosis of these two species of Mycoplasma, in association with arthritis, has increased in the Mid-West United States since 2009.<sup>1</sup> This same lab most frequently diagnosed *M. hyorhinis* in animals less than 10 weeks of age and *M. hyosynoviae* in animals more than 10 weeks of age.

Infectious arthritis can be caused by many different species of bacterial organisms. At Gallant, we commonly isolate: *Streptococcus suis*, *Actinobacillus suis*, *Haemophilus parasuis*, *Escherichia coli*, and *Staphylococcus aureus/hyicus* from joints and synovial fluid.

The submission of samples for evaluation is the only way to determine if the causative organism is Mycoplasma.



## Testing Options

The fastidious nature of *M. hyosynoviae* and *M. hyorhinis* can make them difficult to isolate. However, a highly specific real time PCR test can detect the presence of these two swine Mycoplasma species, even if isolation is unsuccessful. Conversely, a negative PCR test would validate the negative isolation results.

Enriched media and strategic use of antimicrobials can be successful in isolating and purifying even the most fastidious Mycoplasma species.

## Samples

Choose untreated animals that exhibit early signs of a stiff gait or are slow to move around. Avoid animals with chronic, swollen joints.

For live sampling, aspirate synovial fluid from the joint and transfer fluids to a sterile plastic screw cap tube. Package tubes on ice and ship to lab as soon as possible.

For necropsy, remove the leg and ship the intact limb on ice. Avoid sampling animals that have been found dead.

All samples should be kept cold during transport and shipped as soon as possible.

## At the Lab

Samples will be screened by Gallant's Real Time PCR to detect the presence of *M. hyosynoviae*, *M. hyorhinis* and/or *M. hyopneumoniae*. If positive, the samples will be further processed for isolation of the organism.

These strains of Mycoplasma are fastidious and can be slow to grow on lab media. Results of isolation may take several weeks. Once growth is achieved the culture is evaluated for purity- to avoid extraneous organisms complicating the results. The lab may have to employ several techniques to "clean-up" the Mycoplasma culture.

When a pure culture is established, a confirmatory PCR test is run to positively identify the strain. This culture is stored for future use in an autogenous bacterin.

## Bacterins

Gallant now has experience in propagating swine Mycoplasma species and manufacturing autogenous Mycoplasma bacterins.

The organisms grow to high cell counts in our specialized media and are blended with an oil based adjuvant.

Bacterins intended for piglets are a 1.0 mL dose and have a 60 day withdrawal. An autogenous Mycoplasma bacterin can contain more than one species of Myoplasma.



<sup>1</sup>Gomes Neto, JC et al. Mycoplasma-associated arthritis: Critical points for diagnosis. JSHP March and April 2012