Mycoplasma Mastitis

Mycoplasma species are very small bacteria and are unique because they lack a bacterial cell wall. This means they are neither Gram-negative nor Gram-positive. Several Mycoplasma species cause mastitis, including M. bovis (most common mastitis isolate), M. alkalescens, M. bovigenitalium, and M. canadense. These organisms may be isolated from both sick and healthy animals, from the respiratory and reproductive tracts and other sites.

Source / Transmission
Mycoplasma is a contagious pathogen, and thus is transmitted cow-to-cow through infected milk on milking equipment or milker’s hands. New herd infections occur primarily by the introduction of new, infected animals. However, new infections may occur without the introduction of new infected animals. It has been reported that clinical mastitis cases occurred after contact with adult cows showing respiratory symptoms, and after contact with calves infected with Mycoplasma pneumonia or arthritis. Heifers may also become infected with Mycoplasma prior to calving and serve as subclinical carriers after freshening. Mycoplasma is unique in that it may also be spread hematogenously (through the blood), meaning that an animal with a respiratory infection caused by Mycoplasma may also develop Mycoplasma mastitis.

These bacteria can be shed in large numbers in the milk of infected animals. Because of this, the hospital parlor is a major source of infection during an outbreak, resulting in many new infections in a short period of time. Since Mycoplasma is not susceptible to intramammary antibiotics, treatment may actually spread the bacteria if workers hands or infusion equipment become contaminated with milk from an infected cow.

Infection
The characteristic presentation of Mycoplasma mastitis is multiple quarters affected, severely decreased milk production, watery or serous milk with flakes, and the cow appears healthy. Clinical mastitis cases that fail to respond to therapy and from which no bacteria can be isolated using traditional aerobic culture techniques should also be suspect for Mycoplasma. Some cows infected with Mycoplasma may be subclinical. The somatic cell count of affected cows is usually elevated, but may also be normal.

Risk Factors
Significant risk factors for Mycoplasma mastitis include: the purchase of new, untested animals; poor housing ventilation; contact between calves and adult cattle; and poor hygiene practices in the milking parlor.

Diagnosis
Mycoplasma may be diagnosed either with bulk tank culture, or individual cow culture. However, in order to isolate Mycoplasma in the laboratory special culture media and incubation conditions must be employed. This means that Mycoplasma will not be identified by on-farm culture, and Mycoplasma culture must be specifically requested from the diagnostic lab.

Control
There is no treatment for Mycoplasma mastitis and once infected, cows should be considered infected for life. The only means of control is identification, segregation and culling. In cases where a large percentage of the herd is affected and immediate culling is not feasible, identification and segregation of affected animals must occur with care taken to limit opportunities for transmission. Affected animals must be milked last and milking equipment thoroughly disinfected between milkings. Excellent hygiene practices are required to avoid transmitting Mycoplasma in the milking parlor. Herds that routinely purchase new animals should have their bulk tank milk tested regularly for Mycoplasma, and should request a bulk tank culture from the source herd.

References