Contagious mastitis can infiltrate closed herds

Understanding the behavior of three contagious bacteria can help you guard against poor milk quality and udder health damage

By Gary Bennett

When it comes to contagious mastitis, three bacteria are of the most concern: *Staphylococcus aureus, Streptococcus agalactiae* and *Mycoplasma sp.* (particularly *bovis*). In a two-month period, the four Quality Milk Promotion Service (QMPS) laboratories identified these organisms in a large number of herds:

- *Mycoplasma* 44 herds
- *Strep. agalactiae* 116 herds
- *Staph. aureus* 340 herds

Understanding bacteria

All three bacteria are contagious with their primary source being an infected cow's udder. But each has its own peculiarities.

1. *Mycoplasma*

Besides being an untreatable mastitis, *Mycoplasma* bacteria are also responsible for pneumonia, swollen joints (synovitis) and ear infections, which are often demonstrated with head tilt in calves. *M. bovis* can frequently be found in the upper respiratory tract of healthy animals where it acts as an opportunist, waiting for another bacterial or viral invader to distract a cow's immune system, allowing it to cause a secondary disease.

Mycoplasma bacteria enter the udder through the teat streak canal at milking time or as a result of contaminated intra-mammary products or techniques.

Like many other bacteria, *Mycoplasma* are not shed consistently from an infected udder, making a single negative cow or bulk tank sample less than 100% reliable. Infected animals should be culled.

2. *Strep. agalactiae*

This bacterium is the classic contagious mastitis pathogen and responds quite well to antibiotic therapy. This is the organism that prompted post-milking teat dipping and total dry cow therapy to become widespread practices.

Strep. ag. is shed almost continuously from an infected gland. It can cause elevated Plate Loop Counts (PLC) as well as Somatic Cell Counts (SCC).

The bacteria are most commonly introduced into a herd through the purchase of an infected, mature animal. But virgin heifers can also be infected. In herds that practice good management but have few or no milk cultures run, it's not unusual to find *Strep. ag.*, even if it's been a closed herd for more than 10 years.

Dry treatment is almost 100% effective in eliminating the infection, but milking cows act as reservoirs of infection to perpetuate the disease. The subclinical nature of infections tends not to attract attention to these animals even if their SCCs are higher than desired.

Once identified, infected animals should be treated in all four quarters with an effective intra-mammary product.

3. *Staph. aureus*

The fact that *Staph. a.* was the most common contagious mastitis pathogen isolated in the QMPS study shouldn't be surprising since it can cause so many other types of disease besides mastitis.

As with *Mycoplasma* and *Strep. ag.*, *Staph. a.* enters the udder through the streak canal at milking time so teat dipping effectively prevents infection. It's suspected that biting flies can damage teat ends on heifers and spread *Staph. a.* before an animal ever calves. *Staph. a.* from other sources – skin infections on cows, milkers' hands or barn cats – can initiate new infections in a previously "clean" herd.

While the bacteria respond to therapy, success is varied, even to dry cow treatment. Individual strains are frequently resistant to penicillin, ampicillin and amoxicillin.

Like *Mycoplasma*, *Staph. a.* are shed inconsistently from an infected udder, making a single, negative sample solely an "indicator" that must be confirmed. Known-infected animals should be milked last until they dry off or leave the herd.

Procedures to follow

Since maintaining a closed herd isn't, by itself, enough to prevent contagious mastitis, consider these measures:

- Use a team of professionals to develop a herd-health program.
- Establish a good milking routine that includes post-milking teat dipping and dry cow therapy. Explain the purpose of the routine to all milking personnel.
- Forestrip cows to stimulate a better letdown and to identify cases of clinical mastitis early.
- Have clinical mastitis cases cultured and discuss the results with your veterinarian. In cases of negative routine culture, *Mycoplasma* should be considered.
- Several times a year have bulk tank samples cultured – both routine and for *Mycoplasma*. Discuss results with your veterinarian. (If you complete the NYSCHAP Mastitis Module, you get six free tank cultures per year.) Contact your herd veterinarian or your regional QMPS laboratory to arrange for the sampling.

Even cows in a closed herd such as this one can fall victim to contagious bacteria. Only careful monitoring helps protect milk quality and herd health.