

MASTITIS: where are we now?

Mastitis has been a front of mind discussion topic in the dairy world and researched extensively over the years. As one of the most common diseases affecting dairy cows, mastitis is a significant area of concern for both farmers and veterinarians. Mastitis can severely affect the health and milk production of dairy cows and is often the reason for increased culling rates. The disease can cost farmers globally as much as \$US19.7 Billion - \$US32 billion annually.

Despite extensive global research and the availability of various treatments to manage mastitis, the problem persists and must be dealt with by farmers and veterinarians. Mastitis prevention, best practice and treatment methods are shared within the industry to benefit producers in improving cow's health and milk production, and ultimately to save cost. Currently, consumers globally are struggling with the rising cost of living as part of the effects of the many issues and events around the world. A rise in dairy food cost would be an additional challenge which they may not be willing to take on. For example, the rising price of milk in Japan has reduced consumer demand for milk, causing farmers huge losses when their supply had no demand.

It is crucial to ensure that milk remains affordable despite market volatility.

To this end, treating mastitis appropriately has never been more critical. Antimicrobials, in the form of intramammary or systemic injection have proven to be a very effective treatment. The world is aware and concerned about the inappropriate use of antimicrobials which effects the ecosystem. The biggest concern related to this is the fact that many farmers use antibiotics to treat all cows suspected of mastitis without a proper diagnosis.

As diagnosing is time consuming, antibiotics are often given to all cows to treat the disease promptly. This is not an efficient approach to treatment as it incurs more cost from wasted milk due to antibiotic residues, labour and the antibiotics treatment. Using more antibiotics than required may also increase the potential for antimicrobial resistance over time.

The use of adjunctive treatments such as non-steroidal anti-inflammatory drugs (NSAIDs) is well-researched and has been beneficial for treating mastitis. Such treatments can be used at the time of mastitis detection.

As identifying pathogen type is needed to determine the right course of treatment, the diagnostic stage is one of the most important in the mastitis treatment process. Two of the most common tests used, Somatic Cell Count, and the California Mastitis Test, are used only for mastitis detection. These tests both detect and measure the number of somatic cells present, with an increased level indicating the presence of mastitis. They do not confirm the presence of a gram-positive pathogen.

Recent advances in diagnostics technology have made it more efficient to treat many potential causes of mastitis effectively. A test that generates faster and more accurate results could become a gold standard in identifying the pathogen type in mastitis cases. This is crucial information as current knowledge suggests that only infections caused by gram-positive bacteria benefit from antibiotic therapy. Having a quick and effective diagnostic tool would be a game changer. With growing pressure on farmers to reduce antimicrobial use, a tool which could successfully distinguish between gram-positive and gram-negative cows, would be a huge advantage and cost efficient.

Progress must take place sooner rather than later as this problem of mastitis has been going on for years. With extensive scientific knowledge and diagnostic technologies now available, advancement in this area should be imminent. Farmers and veterinarians depend on experts and key players in the animal health industry to innovate and revolutionise diagnostics and treatment methods to create better supply, decrease production cost, reduce the use of antibiotics, and maintain healthy and happy cows.

References are available from the authors

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