THERE are many legislative, consumer, and advocacy groups pushing for reduced antimicrobial use in dairy production. On-farm practices involving the treatment and control of mastitis are a great place to start the conversation when it comes to prudent antimicrobial use because this area accounts for approximately two-thirds of all antimicrobial use on farms.

According to the American Veterinary Medical Association, stewardship is best defined by decisions that influence the need for antimicrobial therapy in the first place and that maintain the effectiveness of them when they are used. Because of this and public perception of antimicrobial use, we have to ask ourselves what mastitis treatment and control strategies are sustainable practices from an animal well-being and economic perspective.

A bedrock standard

Treating every quarter of every cow with an antimicrobial at dry-off, or blanket dry cow therapy, has been an industry standard practice for a long time. Through the long march toward better udder health and preventing new infections, our industry is at a place where blanket dry cow therapy may no longer be needed. Contagious pathogens such as Strept. ag. and Staph. aureus have been eliminated or controlled in many herds. In addition, test day somatic cell count (SCC) has never been lower than it is now, as indicated by the National Dairy Herd Information (DHIA) average of 160,000 in 2020 versus 304,000 in 1995.

Further, while the average quarter at dry-off had a subclinical infection when blanket dry cow therapy was introduced into mastitis control plans, current data indicates that nearly 80% of quarters are not even subclinically infected in many herds. The software tools with your VoR to set up selective dry cow therapy can help our industry be a leader in prudent antimicrobial use.

Does it work?

What happened to cow health and performance in herds that used selective dry cow therapy?

In some countries like the Netherlands, on preventive use of antibiotics has been in place since 2012. This includes blanket dry cow therapy. In these countries, clinical mastitis has not spiked, milk production has not dropped, and in most herds SCC has fallen even further. A recent USDA-funded, randomized trial enrolled seven herds from New York, Minnesota, Wisconsin, Iowa, and California, representing over 15,000 cows. The results published in the Journal of Dairy Science showed that selective dry cow therapy can be used without negatively affecting cow health and performance in early lactation while reducing antimicrobial usage at dry-off by 55%. This held true when farms used either a culture-based or algorithm-guided approach to using DHIA test-day data and herd clinical mastitis records.

After these encouraging results, the New York Farm Viability Institute supported the enrollment of 20 herds. These herds were monitored for about a year after beginning selective dry cow therapy. The herds used the algorithm-based approach for differentiating between high-risk cows (treated with an intramammary antibiotic) and low-risk cows (not treated with an intramammary antibiotic, only a teat sealant).

The herds enrolled were able to achieve between 70% and 100% herd dry-off lists to be easily produced, clinical mastitis detection allow systematic treatment and control of mastitis in the fresh period. The software will generate a list of cows that should be dried-off and will automatically identify those animals at high risk of having a subclinical infection.

The best candidates

What herds can make this work? Selective dry cow therapy is not right for all herds. Characteristics of herds that would be good candidates for selective dry cow therapy include:

- Those that already use well-operating procedures for selective dry cow therapy.
- Herds with well-suited and not spreading.
- Excellent technique at dry-off.
- A well-maintained facility for dry cows.
- Involvement of the Veterinarian of Record (VoR) in devising mastitis treatment protocols through systematic standard operating procedures (SOPs) that allows you to implement the algorithm based on information from the U.S.-based trial. You can also customize the algorithm to make it more stringent or reduce the risk of missing the opportunity to use antibiotics for a dry-cow.

The software will generate a list of cows that should be dried-off and will automatically identify those animals at high risk of having a subclinical infection.

These high-risk cows should be on a protocol developed by the farm's VoR to get an antibiotic and teat sealant, while those animals at low risk should get a teat sealant only. Your veterinarian can help set up and communicate to you with monitor program compliance and any impact on bulk tank SCC and clinical mastitis.

If your herd has good udder health and meets the criteria above or in the guidelines of this article, using the software tools with your VoR to set up selective dry cow therapy. Adopting selective dry cow therapy in well-managed herds not only saves the farm money, but it also helps our industry be a leader in prudent antimicrobial use.