by John Goeser

We can feed for fertility

TO ALL the avid *Hoard's Dairyman* readers out there — thank you! Over the nearly 15 years since graduate school, I've written articles for different publications, but my experience with *Hoard's Dairyman* has been unique and outstanding.

Goeser

You, the reader of this magazine, are the difference. I've been blessed and humbled by the discussions that have tied back to my Feeding Fundamentals column. I continue to learn from you all, through new conversations with long-time friends and colleagues, as well as new network connections with outstanding people. This latter case played out following the September 25, 2021, article titled, "Dairy is evolving — so should your team," when veterinarian and embryo transfer (ET) expert Byron Williams, D.V.M., reached out to me.

Our worlds collided not because of a specific nutrition topic, but rather because we both recognized that different segments of dairy farming and agribusiness can better thrive by improving communication between advisers and taking a team approach. Herein lies the focus for this article, the intersection between nutritional and veterinary science in feeding for fertility with high-value embryo transfer (ET) programs.

The genetic benefits

In our conversations between late 2021 and early 2022, Williams taught me a great deal about embryo transfer programs and their potential benefits. Backed by more than 30 years of experience, Williams described how ET programs can be utilized as a valuable technology to improve the genetic foundation of a dairy herd.

Genomic testing identifies the production, type, health, and fertility index of individual animals. ET programs increase the number of offspring from the better cows and heifers by using them as donors and minimize the number of offspring from the poor cows and heifers by using them as recipients. These programs may also maximize the impact of sorted semen from elite sires.

Some dairymen are able to produce embryos for export markets, bulls for A.I. centers, and heifers for consignment sales. When Williams explained that some of these high-value calves could be worth more than $100,000 due to high-end genetic potential identified through genomic evaluation, I immediately thought of those odds to be like the odds of winning the lottery!

The chances of improving your herd or producing lottery winning calves aren't as plentiful as they could be if the ET program pregnancy rate is less than optimal. Just being "good enough" does not have the same value as being "as good as it could be."

Aim for over 50%

According to Williams, the industry benchmark for ET program performance is a 60-day pregnancy rate of 50%. In his experience, the focus over the past decade has centered on volume and cost but not necessarily on optimizing ET program performance. The 50% success rate also equates to 50% failure, and that leaves a lot of room for improvement. Williams said that high-performing ET programs can achieve 60% or greater pregnancy rates, so my next question was, "What does a 10% increase in ET calves on the ground mean for a business-minded dairy?"

There are quite a few ways to put economics to this. Coming back to the lottery ticket metaphor, for every 1,000 ET attempts, if we realize an additional 100 live calves . . . based on a 10% improved pregnancy rate . . . then we stand a substantially greater chance to improve the herd or win the ET calf lottery.

The avenues to greater pregnancy rates and more ET calves include nutrition and management factors. Emphasizing the intersection between nutritional and veterinary sciences, Williams made a comment that resonated with me. He said, "Reproduction and nutrition are railcars connected to the same train — wherever the nutrition car goes, the reproduction car is soon to follow."

This statement makes perfect sense when we discuss nutritional impact factors that have affected reproductive program performance.

Keeping clean, fresh feed in front of the lactating herd is a sound management objective. These are the cows that pay the bills, and we can readily recognize negative feedback if we allow empty bunks to affect the bulk tank and our milk checks. However, during periods when we increase our total mixed ration (TMR) feeding amounts or frequency, we're also left with more refusals.

This feed is too valuable to discard, so it often ends up in heifer or dry cow diets. This practice can be sound if we have a firm understanding of the weigh backs' nutritional value and know that the weigh backs aren't spoiling in the summer heat. Unfortunately, these two assumptions fall by the wayside too frequently, and heifers pay the price if fed this refusal.

Replacement and recipient heifers don't provide immediate feedback through the bulk tank like their milking herdmates. Any nutritional challenges in reproductive programs may take weeks or months to materialize. If the weigh backs represent sorted feed(s) or if substantially different amounts are fed each day, the likelihood for nutritional imbalances in the heifer diet is high.

Address this by establishing a weigh back threshold that, when exceeded, triggers a discussion amongst nutrition and veterinary teammates. After the threshold issue is addressed, ensure your nutritionist is aware of the refusals' nutritional value. Testing the TMR/refusal mix can help your nutritionist grasp what the actual feed value is for this valuable but variable feed ingredient in heifer diets.

Second, ensure that the refusals are stable and not spoiling. Mold and yeast analysis, or a simple thermometer, can identify spoiling feed. I recall quite a few farm visits where we've recognized that high cow refusals were spoiling in the heat and humidity. These antinutritional factors in weigh backs shouldn't make their way into high value heifers where they may affect reproductive performance. Thankfully, there are feed stabilizers that can be mixed in with weigh backs or the TMR to keep the feed clean and cool to capture the value.

Also, ensure that mycotoxin contamination isn't a feed hygiene risk factor that's detracting from reproductive program performance. Zearalenone is a known estrogen-mimicking compound that can wreak havoc on reproduction performance. Remember also that there are nearly always multiple mycotoxins at play. Don't just check for one, as singling out one mycotoxin is just like trying to pheasant hunt with a .22 caliber rifle — it's short-sighted and bound to fail.

Develop a plan

The initial foundation of my conversation with Williams was rooted in teamwork and communication. The first step is to monitor pregnancy performance for both ET and A.I. heifer groups, then to share that information with your team.

Team meetings may or may not be a tool for your dairy; however, better communication is always an opportunity for better problem solving. Through the past several years, we've learned to communicate with teammates in newfound ways such as team video calls on phones or computers. Group text messages can also be a less intrusive or time-consuming fashion to keep key stakeholders abreast of pertinent details in a discussion thread.

Coming away from this article, thank you for your engagement with me! And now, turn your engagement to your veterinarian and nutritionist. Send them both a text message in a group thread and see what happens.

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