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PRIMED FOR SUCCESS

WHY NOW IS THE TIME TO INVEST IN BEEF-ON-DAIRY NUTRITION, ESPECIALLY FROM A LONG-TERM REPUTATION STANDPOINT

With beef-on-dairy calf prices reaching record highs, producers have a unique window to turn short-term demand into long-term value. Sustaining that value requires more than good genetics, it means better nutrition and management, especially in the calf's first weeks of life. As Drs. Michael Steele and Tom Earleywine explain, what we feed – and when – can help shape everything from carcass consistency and quality to market reputation.

Why is now the right time to invest in beef-on-dairy cattle, especially from a long-term reputation standpoint?

Dr. Steele: 2025 prices are historically high; $1,000-1,500 Canadian for a newborn black calf. But without better nutrition and management, the value may not remain high. We've made big strides in genetics, but we're behind in early-life care, particularly in colostrum feeding, milk replacer nutrition, grain transitions and post-weaning nutrition. These phases shape long-term resilience, performance and carcass value.

We also have more control over methane emissions because cow-calf operations produce most of the methane in the beef industry. And unlike the conventional beef industry, we can rapidly improve genetics and gather data. If we invest now, we can build long-term value and avoid a steep market decline.[2]

Dr. Earleywine: Beef prices are driving expansion. The native cow-calf herd will rebound; and if we don't match their quality, we'll lose market share. Calf prices are hitting $1,000-1,500 in the U.S. in 2025, numbers we've never seen before. But reputation matters.

We're responsible for the preweaning phase and the weaning transition in beef-on-dairy calves, and that phase is critical. If we get it wrong, it affects the end product. Investing now in nutrition and management isn't just smart, it's essential to keeping beef-on-dairy competitive in the long run.

How are the nutritional needs of beef-on-dairy calves different from either purebred dairy or beef animals?

Dr. Earleywine: Crossbred beef-on-dairy calves typically grow faster and are more efficient than Holsteins, and they need protein to support that muscle development. In Purina Animal Nutrition trials, higher-protein milk replacers (27% vs. 25% or less) and calf starters led to significantly better growth.[3] These crossbreds are genetically predisposed to build more muscle, so protein is critical.

Dr. Steele: Beef calves typically receive more colostrum immunoglobulins (IgG) at birth because they nurse from the cow, whereas beef-on-dairy calves often receive less, both in volume and concentration. That means we may need to rethink how much and what kind of colostrum we feed, possibly more concentrated or higher-quality products. Transportation also plays a big role. Beef-on-dairy calves are often moved early, and that stress adds nutritional demands. Some buyers now pay premiums for heavier calves, incentivizing better early-life nutrition.

How can early investments in nutrition set a beef-on-dairy program apart in the eyes of buyers or processors?

Dr. Steele: Early-life nutrition is thought to have a big impact on carcass quality, though we still need more long-term data specific to beef-on-dairy animals. In dairy, we know better early nutrition can improve health and productivity, and there's every reason to believe the same applies here. But we can't just copy what works for dairy replacements. For example, in Canada, we feed very high levels of milk, but that might not be ideal for beef-on-dairy calves, especially after transport. They may benefit more from moderate-to-high levels, paired with the right starter feed formulation but there has been very little research in the area. There's also potential to customize feeding strategies throughout early development to improve end-product quality.

Dr. Earleywine: From birth to eight months, calves are still developing the cells that determine marbling and muscle quality. Nutrition during this window, milk and concentrate feeding directly affects carcass traits. You can influence how many fat cells form (which drives marbling), how muscle cells grow and even how efficiently the animal will perform later. Getting nutrition right in those first months is key to producing a high-quality beef product, and it's something to which buyers and processors increasingly are paying attention.

In what ways does nutrition influence carcass consistency for beef-on-dairy cattle?

Dr. Earleywine: We're asking a lot of these calves by weaning them earlier than nature intended, then transporting them multiple stressful times. If we can support their gut early through proper nutrition, calves are better equipped to handle stress and maintain consistent growth. Our lab focuses heavily on this early-life programming because how you feed a calf in those first weeks can help shape its entire development trajectory.

Dr. Steele: We don't have a specific formula yet for "feed this to get this carcass," but general principles tell us proper health and growth early in life usually lead to optimal carcass outcomes. It's about finding the balance of what level of milk or nutrition gives us the best return. We need more long-term data, but it's likely that investing early pays off later. The ability to fine-tune feeding, especially with tools like automated feeders, also gives us more control to test and improve these strategies over time.

WHEN DONE RIGHT, THE PRIMESTART™ PROGRAM SUPPORTS CALVES HITTING

300 LBS. BY ABOUT 87 DAYS OF AGE.[5]

On some operations, calves may not hit that weight until after 100 days.

Beyond carcass consistency, how does nutrition support marbling, yield or grade potential in beef-on-dairy animals?

Dr. Steele: There's data supporting a long-term link between early nutrition and marbling outcomes.[4] This opens exciting possibilities: By adjusting genetics and nutrition, especially with beef-on-dairy animals, we can help produce a final beef product that more precisely meets consumer preferences. There's a lot of potential to optimize quality beyond what's traditionally possible.

What is Purina's PrimeStart™ program and how is it designed to support beef-on-dairy calves?

Dr. Earleywine: The PrimeStart™ program includes both our milk replacer and starter feed. Colostrum management is part of it, too. It's all about setting these crossbred calves up on a higher plane of nutrition from day one so they can deliver optimal performance all the way through to carcass value.

Let's start with colostrum. We strongly recommend two high-quality feedings within the first 12 hours of life. Current customers can use our Purina Caddie™ calf app to evaluate and balance colostrum quality to provide the appropriate quantity of IgG depending on its body weight. That means knowing both your colostrum quality and the volume needed. For many producers, reaching the appropriate target for each calf can be challenging with the old standard of "just provide four quarts," which is why we developed the app and also offer a colostrum replacer to help "spike" the IgG content if needed.

From there, the PrimeStart™ Calf Milk Replacer is a high-protein formula specifically designed for crossbred calves. It includes technologies like L-carnitine – which plays a role in energy metabolism and muscle development – as well as our LOL *bacillus*, which supports gut health and proper microbiome development. These help the calf become efficient early in life.

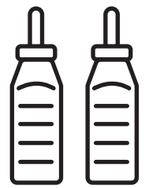
We typically recommend feeding two quarts three times a day or three quarts twice a day, and weaning no earlier than 56 days of age. That longer milk-fed phase, when paired with a high-quality starter feed, makes a real difference. PrimeStart™ Complete Starter Feed includes elevated amino acids essential for muscle growth, is appropriately balanced for energy and is highly palatable, so calves eat aggressively and can grow fast.

When done right, the program supports calves hitting 300 pounds by about 87 days of age.[5] That's meaningful. On some operations, calves may not hit that weight until after 100 days. Faster, more efficient early growth leads to a lower cost of gain. Compare that to cheaper milk replacers fed at lower volumes, where calves often burn more nutrients just maintaining themselves rather than growing. That ends up costing more in the long run.

For producers, that consistency and early weight gain can mean quicker turnaround and more calves through the system. For those retaining ownership through finish, we're seeing evidence of improved feedlot performance and even better marbling potential, tying back to what Dr. Steele mentioned about early muscle development. Better nutrition early in life helps sets the stage for better outcomes.

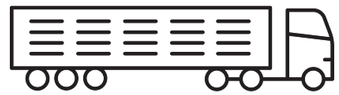
What advice would you give to producers looking to elevate their nutrition programs as a long-term investment?

Drs. Earleywine and Steele: Producers should focus on three core areas:



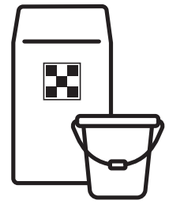
BULK UP COLOSTRUM MANAGEMENT PRACTICES.

Calves need high-quality colostrum. For example, a 90-lb. calf needs approximately 300 grams of IgG, delivered within the first 12 hours in order to meet standards for colostrum management.[6] Two timely feedings and tools to test and balance colostrum are recommended.



PROVIDE PRECONDITIONING AND TRANSPORTATION SUPPORT.

Using products like Land O Lakes® HST Water Supplement and Land O Lakes® Calf Insure® helps calves transition smoothly between operations and support early immune strength to handle stress.



SUPPORT CALVES WITH A COORDINATED MILK REPLACER AND CALF STARTER PROGRAM.

These must work together to fuel growth, support gut health and unlock the calf's beef genetic potential. Early gains can translate to optimal performance and carcass value. If a producer can get it right in those first eight to 12 weeks, the benefits show up all the way to the rail.

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Dr. Tom Earleywine is director of young animal nutrition for Land O'Lakes where his team is responsible for neonatal animal research on over 1,200 head annually and provides technical support for North America. Dr. Earleywine has published hundreds of articles in scientific journals and popular press. He received his B.S., M.S. and doctoral degrees from the University of Wisconsin-Madison and was raised on a dairy farm near Brodhead in southern Wisconsin U.S.A.

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Dr. Michael Steele is a professor in the Department of Animal Biosciences, studying ruminant physiology from the molecular to whole-animal level. Raised on a progressive dairy farm in Ontario, he explores how early-life diet and microbiota interactions affect gastrointestinal health and development. His research focuses on how pre-weaning nutrition and management influence long-term metabolic and digestive outcomes in livestock, aiming to improve production systems through a better understanding of early-life physiological programming.