

THE COLOSTRUM COUNSEL



With calving in full swing and Mother Nature throwing some curve balls, ensuring newborn calves receive high-quality colostrum is more critical than ever.

Introduction

Colostrum, the first milk produced by the dam, is rich in immunoglobulins (antibodies), essential nutrients, and bioactive components that are vital for the health and survival of neonatal calves. The timely intake of adequate colostrum is crucial for passive immunity transfer, protecting calves from diseases and setting the foundation for robust growth and development.

The Importance of Colostrum in Beef Calves

Newborn calves are born without a fully developed immune system, making them susceptible to various pathogens. Colostrum provides the necessary antibodies, primarily Immunoglobulin G (IgG), to safeguard against infections during the early stages of life. Research indicates that calves require approximately 300 grams of immunoglobulins (IgG) within the first day of life to achieve excellent passive transfer.

The absorption of these IgGs is highest in the first 2 hrs of life. Producers should be aware of this and strive to ensure calves are receiving colostrum from the dam or as a supplement/ replacer in a timely fashion.

Beyond immunoglobulins, colostrum contains elevated levels of fat, protein, vitamins (such as A, D, and E), and minerals compared to regular milk. These nutrients are essential for jumpstarting the calf's metabolism, stimulating digestive activity, and supporting overall vitality.

Dr. Lisa Gamsjäger's Research Findings

Dr. Lisa Gamsjäger, a researcher specializing in pre-weaning ruminant health, has focused her studies on the transfer of passive immunity and neonatal vaccine strategies. Her work emphasizes the critical role of colostrum not only in providing antibodies but also in delivering growth factors

and bioactive components that influence gut health and metabolic programming. Dr. Gamsjäger's research suggests that even when calves receive sufficient antibodies to prevent clinical Failure of Passive Transfer (FPT), inadequate intake of these additional colostrum components can lead to suboptimal growth and increased susceptibility to stressors such as weaning and transportation.

In a collaborative study, Dr. Gamsjäger and her colleagues investigated the impact of colostrum management on beef calves. The findings highlighted that calves receiving high-quality colostrum shortly after birth exhibited improved health outcomes and reduced incidence of diseases. This underscores the necessity for beef producers to adopt effective colostrum management practices to enhance calf performance and welfare.

Challenges in Colostrum Management for Beef Producers

Unlike dairy operations, where colostrum quality can be directly measured using tools like Brix refractometry, beef producers often lack the means to assess colostrum quality on-farm.

Therefore, implementing best management practices is essential to ensure calves receive adequate and high-quality colostrum. Factors to consider include:

- **Dam Nutrition and Health:** Proper nutrition and health of the dam during gestation significantly influence colostrum quality and yield.
- **Timely Intervention:** Calves should ingest colostrum as soon as possible, preferably within the first two hours post-birth, to maximize antibody absorption.
- **Environmental Conditions:** Adverse weather, muddy environments, and stress can hinder a calf's ability to nurse effectively, necessitating manual colostrum administration.

Decision Process for Colostrum Supplementation or Replacement

To assist producers in making informed decisions regarding colostrum supplementation or replacement, the following protocol is recommended:

1. **Birth Intervention Assessment:**
 - **No Assistance or Minor Difficulty:** Monitor to ensure the calf stands and nurses within two hours.
 - **Major Difficulty, C-Section, or Abnormal Presentation:** High risk for FPT; consider immediate colostrum supplementation or replacement.
 - **Dam-related Issues (e.g., death, poor udder conformation, inadequate bonding) or Weak Calf:** Provide full colostrum replacement promptly.
2. **Initial Monitoring (0-2 Hours Post-Birth):**
 - **Calf Standing and Nursing Vigorously:** No intervention needed; continue to monitor.
 - **Calf Not Standing, Lacks Suckle Reflex, or in Adverse Conditions (e.g., mud, twin birth):** Administer colostrum replacement immediately.
 - **Calf Attempting but Failing to Nurse Successfully:** Provide an appropriate dose of colostrum supplement.
3. **Follow-Up Monitoring (6-12 Hours Post-Birth):**
 - **Calf Nursing and Bonded with Dam:** Continue regular monitoring.
 - **Calf Not Nursing:** Administer a second feeding of colostrum supplement or replacement as necessary.
 - **Assess Additional Needs:** Determine further colostrum requirements based on the calf's size and health status.

By adhering to this structured colostrum management protocol and incorporating insights from recent research, producers can enhance calf immunity, reduce disease incidence, and promote optimal growth and development. Proactive colostrum management is a pivotal investment in the long-term productivity and profitability of beef operations.

Dr. Travis White

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