



## BOOST DAIRY PERFORMANCE WITH RUMEN-PROTECTED CHOLINE

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“Rumen-protected choline is a required nutrient for essentially every cow and can be a catalyst for improved dairy performance and profitability. The consistent results observed in milk and colostrum production underscore its value as a must-have component in transition cow nutrition, irrespective of cow health status, body condition score or milk production level.”

Choline is essentially a required nutrient for all dairy cows, with proven benefits on metabolic health, milk production, colostrum yield, and calf vitality. It offers a proven solution to help cows transition smoothly and boost productivity. Discover how this innovation benefits both herds and profitability.

Choline has long been recognized as a critical nutrient for dairy cows, particularly during the challenging transition period. However, its inherent instability in the rumen posed limitations until advancements in encapsulation technology made rumen-protected choline widely available. This breakthrough ensures choline is delivered effectively to the small intestine, unlocking its full potential.

Studies consistently demonstrate that supplementing cows with rumen-protected choline leads to remarkable improvements in milk yield. Across numerous trials, dairy cows experienced an average increase of 2,3 kilograms of milk per day during lactation when supplemented with ReaShure® (Balchem Corporation, Montvale). This boost in production is not only immediate but also sustained,

resulting in approximately 700 kilograms more milk per cow over a standard 305-day lactation period (Figure 1). Such findings highlight the indispensable role of choline in maximizing the productivity of modern dairy herds.

Another compelling benefit is the dramatic increase in colostrum yield. Colostrum, the first milk produced after calving, is vital for calf health, providing essential immunity and nutrients. High-quality colostrum is often in short supply on many dairies. Recent research from multiple universities shows that supplementing cows with ReaShure-XC during the close-up period can increase colostrum production.

### RESEARCH-BACKED EVIDENCE

The wealth of scientific data supporting rumen-protected choline is unparalleled. Over 25 peer-reviewed university studies have consistently validated its efficacy. Notably, ReaShure® (Balchem Corporation, Montvale, NJ) was the product used in these trials, serving as a reliable benchmark for research outcomes.

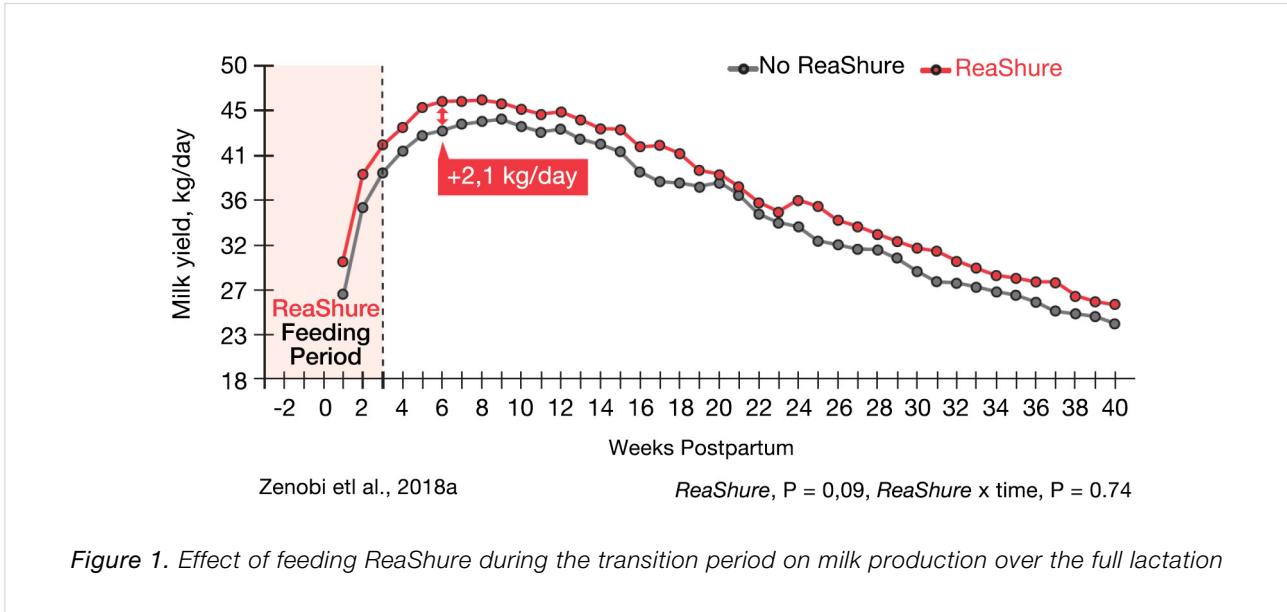


Figure 1. Effect of feeding ReaShure during the transition period on milk production over the full lactation

The newest research continues to show a consistent milk production response across many production situations. Cows supplemented with rumen-protected choline produced an additional 667 to 1.072 kilograms of milk annually (Bollatti et al., 2020; Swartz et al., 2023; Holdorf et al., 2023). The milk production responses were seen in very high-producing cows, regardless of health status or body condition score.

Recent research from multiple universities has shown that cows supplemented with ReaShure®-XC Precision Release Choline during the prepartum period produced up to 85% more colostrum compared to unsupplemented cows (Swartz et al., 2022, Figure 2; Holdorf et al., 2023). In addition to higher volumes, some trials also reported improvements in colostrum quality, including increased immunoglobulin G (IgG) levels (Zenobi et al., 2018). These outcomes are crucial for calf survival and growth, setting the foundation for future lactation success.

While milk and colostrum yield dominate the conversation, the benefits extend beyond production metrics. Choline’s role as a metabolic enhancer helps reduce the incidence of transition-related disorders, such as ketosis and fatty liver, which are major contributors to early culling and lost profitability. By promoting liver function and fat metab-

olism, rumen-protected choline supports smoother transitions and healthier cows overall.

### A NARRATIVE OF PRODUCTIVITY AND PROFITABILITY

For dairy producers, the transition period is a delicate balance of challenges and opportunities. Rumen-protected choline serves as a cornerstone of nutritional strategies designed to optimize this critical window. By investing in a 42-day supplementation protocol, producers can expect tangible and lasting benefits that extend well into the lactation cycle.

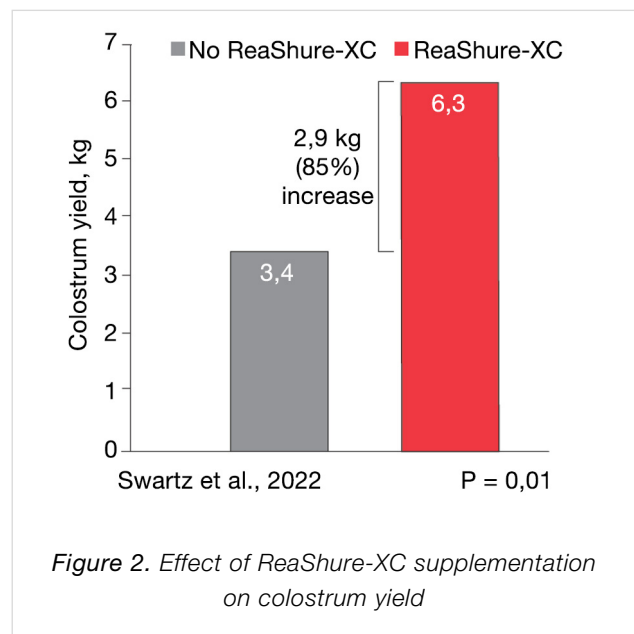


Figure 2. Effect of ReaShure-XC supplementation on colostrum yield



Consider this: a cow begins her lactation with improved metabolic health and a higher milk yield trajectory thanks to rumen-protected choline. Her colostrum output is robust, ensuring her calf receives the best possible start in life. As the lactation progresses, the productivity gains persist, delivering hundreds of kilograms of additional milk and improving overall herd profitability. These benefits are not speculative but are grounded in rigorous scientific validation.

The economic case for ReaShure®-XC is equally compelling. With an investment that can pay for itself within the first 15 days of lactation—primarily through higher colostrum output and incremental milk production—the returns can be both immediate and substantial. Additionally, healthier cows can mean fewer involuntary culls, reduced replacement costs, and greater herd longevity, all contributing to long-term sustainability.

## CONCLUSION

Rumen-protected choline is a required nutrient for essentially every cow and can be a catalyst for improved dairy performance and profitability. The consistent results observed in milk and colostrum production underscore its value as a must-have component in transition cow nutrition, irrespective of cow health status, body condition score or milk production level. While ReaShure®-XC has set the standard for research and application, the broader implications of choline supplementation continue to drive advancements in dairy management.

For producers and nutritionists aiming to enhance herd productivity, rumen-protected choline offers a scientifically proven pathway to success. By addressing the unique challenges of the transition period, it transforms potential obstacles into opportunities, delivering measurable benefits for cows, calves, and operations alike.

***References are available upon request.***

### ***About Sion Richards***

*Dr. Sion Richards hails from a farm in North Wales and holds a degree in Animal Science from the University of Nottingham. He furthered his studies at the same institution, earning a PhD in Nutritional Biochemistry.*

*Thereafter, he worked for Provimi as a Commercial Ruminant Nutritionist and later as Research and Technical Manager. He then transitioned to the UK feed industry, taking on roles as a Technical Manager and Senior Dairy Cow Nutritionist.*

*His expertise expanded during his tenure at DSM Nutritional Products, where he was the Senior Ruminant Specialist and Ruminant Markets Manager for EMEA. Following this, he joined Adisseo as the Ruminant Technical Manager for Europe. Currently, Dr. Richards is the Ruminant Technical Services Manager for EMEA at Balchem.*

*With over 25 years of both practical and technical ruminant nutrition expertise, Dr. Richards brings a wealth of knowledge and experience to his field.*

# “ SCIENTISTS SAY:

Choline is  
a **Required  
Nutrient** for  
Essentially  
Every Cow

“ *Even in very high-producing cows, we saw a milk response of approximately 2,3 kg/cow/day after supplementation.*

-Dr. Heather White,  
Tri-State Dairy Nutrition Conference, 2023

“ *Choline dramatically increased colostrum yield – an 85% increase in our study.*

-Dr. Barry Bradford,  
Tri-State Dairy Nutrition Conference, 2023



“ *Is choline essential or required? I think it's required and we should be framing out a requirement in our nutrition models.*

-Dr. Mike Van Amburgh,  
Cornell Nutrition Conference, 2022

“ *Certainly, Rumen-Protected Choline appears to have some new opportunities to be placed in high-producing dairy cow rations and may impact animal health during the transition.*

-Dr. Mike Hutjens,  
Mikehutjens.com

“ *Choline plays an important role in metabolic health. Multiple studies have shown ReaShure's impact on transition cow health.*

-Dr. Marcos Zenobi,  
Research Study from 2018

**ReaShure®-XC**  
Precision Release Choline

This new science changes everything we thought we knew about choline's impact on the cow and her calf. The ReaShure family of products is the original and most researched rumen-protected choline source, so you can be sure you're getting the benefits you expect. Trust ReaShure and Balchem to deliver, across generations. [Visit Balchem.com/ReaShure-XC](https://www.balchem.com/ReaShure-XC) to learn more.



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