ReaShure®
Precision Release Choline

balchem

SCIENTISTS SAY

Choline is a Required Nutrient for Optimizing **Milk Production**

Even in very high-producing cows, we saw a milk response of approximately 5 lbs/cow/day after supplementation.

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

ReaShure®

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In dairy cattle, choline is recognized by scientists as a required nutrient for a successful lactation, which must first begin with a healthy transition period. Central to a healthy transition period is the ability of the liver to make enough glucose to support milk production. When nutrition and metabolism cannot keep up with the demands of milk production, cows fail to reach their genetic potential.

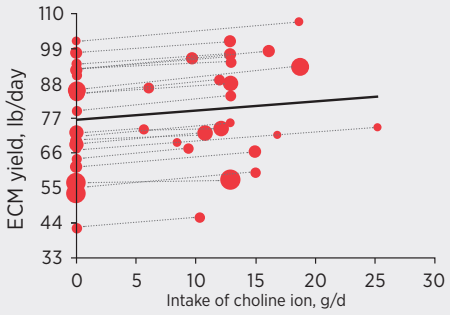
Over the past 25 years, research has shown an average of approximately 5 lbs/cow/day increase in milk production when diets are supplemented with ReaShure® *Precision Release Choline* during late gestation and early lactation.

Three recent peer-reviewed studies demonstrated a milk response ranging from 4.6 lbs/cow/day to 7.9 lbs/cow/day when cows were supplemented with rumen-protected choline. The milk production responses were seen in very high-producing cows, regardless of health status or body condition score.

MILK PRODUCTION

- Meta-analysis consisting of 21 studies, over 1,300 cows
- Average ECM response 4.80 lbs (2.2 kg) per day for cows fed choline (P < 0.001)
- ECM responses consistently positive across all studies for choline-fed cows
- ECM responses consistently positive across all milk production levels for cows fed choline

Figure 1 Effect of supplemental choline on energy-corrected milk yield

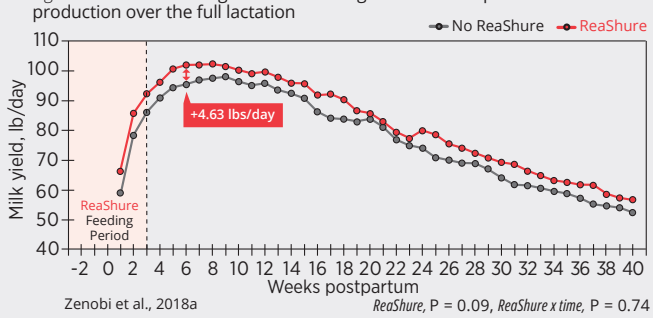


Linear effect of choline ion, P < 0.001

Arshad et al., 2020

- ReaShure fed 21 days prepartum through 21 days postpartum
- 4.63 lbs (2.1 kg) more milk/cow/day for entire lactation for ReaShure-fed cows (ReaShure, P = 0.09; ReaShure x time, P = 0.74)
- 1,400 lbs (641 kg) more mik/cow/year for ReaShure-fed cows

Figure 2 Effect of feeding ReaShure during the transition period on milk production over the full lactation

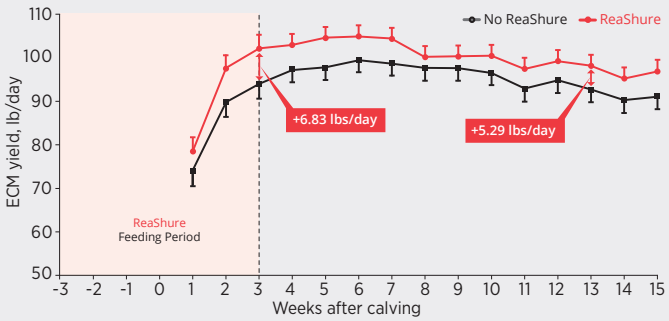


Zenobi et al., 2018a

ReaShure, P = 0.09, *ReaShure x time,* P = 0.74

- ReaShure fed 21 days prepartum through 21 days postpartum
- 6.83 lbs (3.1 kg) more ECM/cow/day during first 21 DIM for ReaShure-fed cows (ReaShure, P = 0.05; ReaShure x Time, P = 0.59)
- 5.29 lbs (2.4 kg) more ECM/cow/day from three weeks through 12 weeks of lactation for ReaShure-fed cows
- 1,646 lbs (747 kg) more ECM/cow/year extrapolated over a 305-day lactation for ReaShure-fed cows

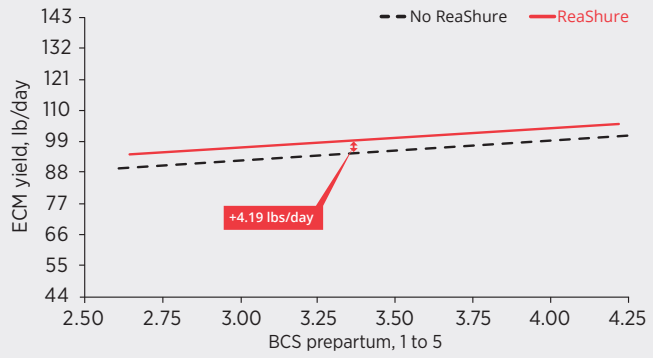
Figure 3 Effect of feeding ReaShure during the transition period on energy-corrected milk over the first 15 weeks of lactation



Bollatti et al., 2020b

ReaShure, P = 0.05, *ReaShure x Time,* P = 0.59

Figure 4 Energy-corrected milk yield response to ReaShure irrespective of prepartum body condition score

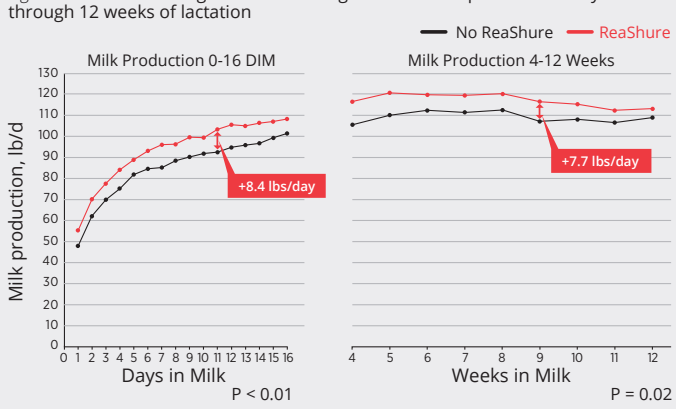


Bollatti et al., 2020a

ReaShure, P = 0.02, *BCS,* P = 0.02
ReaShure x BCS, P = 0.39

- ReaShure fed 21 days prepartum through 21 days postpartum
- 192 cows in study
- Positive response to ReaShure was similar irrespective of prepartum BCS (ReaShure, P = 0.02; BCS, P = 0.02; ReaShure x BCS, P = 0.39)
- Average treatment ECM = 96.31 lbs/d (43.7 kg), average ReaShure ECM = 100.50 lbs/d (45.6 kg), with an increase of 4.19 lbs/d (1.9 kg)

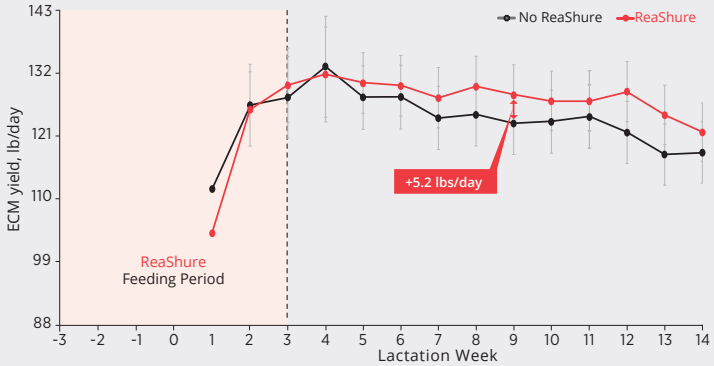
Figure 5 Effect of feeding ReaShure during the transition period on milk yield through 12 weeks of lactation



Swartz et al., 2023

- ReaShure fed 21 days prepartum through 21 days postpartum
- Healthy, high-producing cows (120 lbs peak) responded positively to ReaShure
- 8.4 lbs (3.8 kg) more milk/cow/day during first 16 DIM for cows fed ReaShure (P < 0.01)
- 7.7 lbs (3.5 kg) more milk/cow/day from 22 to 84 DMI for cows fed ReaShure (P = 0.02)
- 2,364 lbs (1,072 kg) more milk/cow/year extrapolated over a 305-day lactation for cows fed ReaShure

Figure 6 Effect of feeding ReaShure during transition on energy-corrected milk yield through 14 weeks of lactation



Postpartum supplementation period (0-21 DIM) ReaShure, P = 0.87
Lactating (22-100 DIM) post supplementation period: ReaShure, P = 0.06

Holdorf et al., 2023

- ReaShure fed 21 days prepartum through 21 days postpartum
- Healthy, high-producing cows (132 lbs peak) responded positively to ReaShure
- 5.2 lbs (2.4 kg) more ECM/cow/day from 22 to 100 DIM for cows fed ReaShure (ReaShure, P = 0.06
- 1,471 lbs (667 kg) more ECM/cow/year extrapolated over a 305-day lactation for cows fed ReaShure

The preponderance of data generated over the past two decades demonstrates that choline is recognized as a required nutrient to help essentially every cow meet and express her innate genetic potential. The response to ReaShure supplementation during the transition period has been remarkably consistent at approximately a 5 lbs (2.3 kg)/cow/day increase in ECM across all trials, and virtually all cows irrespective of health status, body condition score or milk production level. A short-term investment during the transition period can result in long-term returns through higher peaks and greater milk yields over the entire lactation.*

Download the complete research summary featuring five studies by snapping the QR code at right.

SCIENTISTS SAY

Milk Production

Zenobi et al., 2018a
Arshad et al., 2020
Bollatti et al., 2020a
Holdorf et al., 2023
Swartz et al., 2023

Healthy Transition

Lima et al., 2012
Zenobi et al., 2018b
Arshad et al., 2020
Arshad et al., 2022
Poindexter et al., 2023

Choline is a Required Nutrient for Essentially Every Cow

Zenobi et al., 2018a
Zenobi et al., 2018b
Arshad et al., 2020
Bollatti et al., 2020a
Bollatti et al., 2020b
Potts et al., 2020
Swartz et al., 2022
Holdorf et al., 2023
Swartz et al., 2023
Poindexter et al., 2023

Calf Health & Growth

Zenobi et al., 2018a
Zenobi et al., 2022
Holdorf et al., 2023

Improved Colostrum Quantity

Zenobi et al. 2018a
Bollatti et al. 2020b
Swartz et al. 2022
Holdorf et al. 2023

ReaShure®
Precision Release Choline

This new science changes everything we thought we knew about choline's impact on the cow and her calf. ReaShure® *Precision Release Choline* 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 impact her for generations. **Visit Balchem.com/ScientistsSay to learn more.**

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