

Launch Milk Production to New Heights for Sustained Profitability

Glen Aines, Ph.D., *Global Ruminant Health Business Manager* | Kim Keeseey, *Regional Development Manager - Central*

A successful lactation is similar to the successful flight of a rocket. It must start fast and accelerate quickly to reach the highest possible peak, and then follow a sustained glide path to a successful landing. If anything goes wrong during launch, the results can be catastrophic at worst but at the very least result in the rocket not achieving the desired peak.

In dairy cattle, the launch of a cow's lactation begins with the transition period. A smooth, trouble-free transition can boost peak milk production, increasing the altitude from which the trajectory and glide path of her lactation begins. From that higher peak and elevated lactation curve, she'll see increased milk production for the entire lactation. If cows fail to transition smoothly and accelerate quickly to a high peak, there is very little you can do after the peak is reached to change the trajectory of the lactation curve or increase total lactation milk output. Sound investments made during this short 42-day transition period will reap rewards throughout the entire lactation.

Choline's Role in a Successful Transition

Choline is a required nutrient that enables cows to utilize the fat (NEFA) mobilized from body stores. Production of NEFA is the cows' natural way of managing negative energy balance during the early stages of lactation and is a primary source of energy for many functions. Issues occur when the cow's liver cannot effectively process all the NEFA being mobilized, which can adversely affect its function. This leads to increased ketones in the blood (ketosis) which can negatively impact feed intake and further exacerbate negative energy balance, leading to even more NEFA mobilization.



Previous Research Measured the Benefits of Feeding Choline During the Transition Period

Results from 13 previous controlled and peer-reviewed studies reported improvements in milk production and component yields (Table 1). These studies only followed milk production through early lactation, leaving experts to only speculate about potential benefits over an entire lactation.

Table 1

Summary of 13 trials on Rumen Protected Choline

Measurement	Control	Rumen Protected Choline	Difference	SEd	P =
DMI, lb/d	39.98	41.60	+1.62	.46	.0042
Milk, lb/d	70.88	75.75	+4.87	.75	<.0001
ECM, lb/d	76.87	82.78	+5.91	1.33	.0038
Fat yield, lb/d	2.788	3.042	+0.254	.086	.021
Protein yield, lb/d	2.300	2.467	+0.167	.053	.010

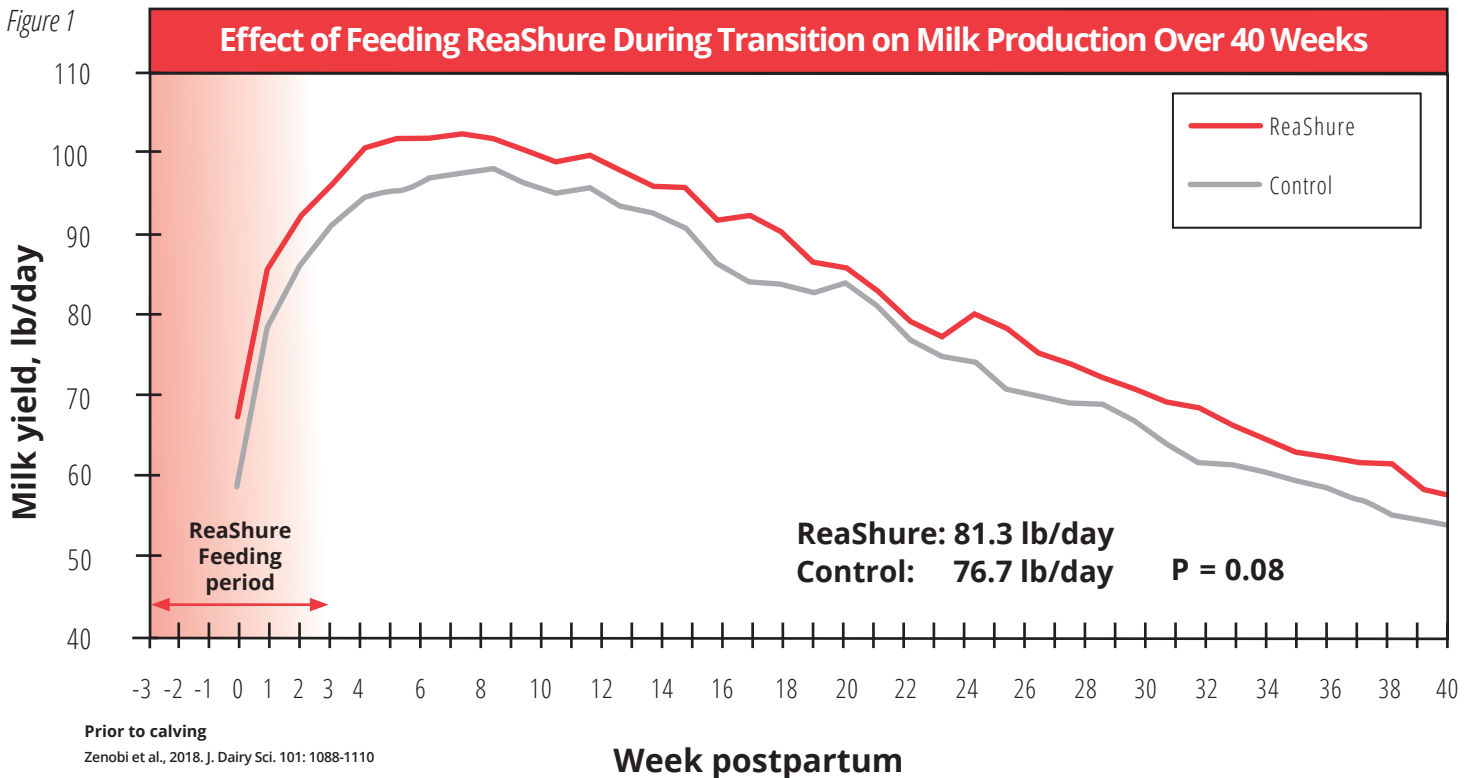
Analytics completed by Ric R. Grummer, Ph.D. Emeritus Professor, Department of Dairy Science, University of Wisconsin-Madison

New Research Shows ReaShure's Benefits Extend Throughout the Entire Lactation

New research from the University of Florida (Zenobi et al., 2017) has discovered that the benefits of feeding ReaShure® Precision Release Choline during the transition period extend throughout the entire lactation, and possibly even beyond. Cows fed ReaShure during the transition period had higher peaks and produced an additional 4.6 pounds of milk per day during the 40-week trial period, resulting in 1,403 pounds of milk per cow.

The research also showed a link between prenatal choline supplementation and calf performance. Calves exposed to ReaShure *in utero* grew a tenth of a pound faster from birth to calving despite identical nutrition and management post-calving. Those calves had lower incidence rates of fever (31.3% vs. 57.7%) during the first 21 days of life and consumed more dry matter (combination of milk replacer and starter).

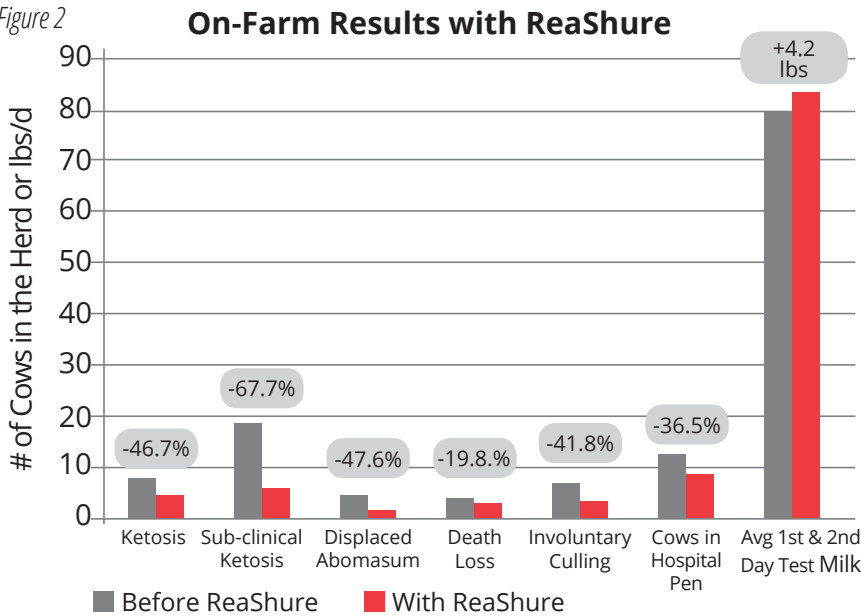
Figure 1



Real Results on Real Dairies

Documented results from commercial dairies are virtually identical to those seen from university studies. Over 250,000 cows have participated in the ReaShure Real Results Challenge (90 day on-farm demonstration trials). These herds have reported an average increase in milk production of 4.2 pounds/head/day. Additionally, producers reported health benefits including reduced incidence of ketosis, displaced abomasum, involuntary culls and death loss (Figure 2).

Figure 2



Health Benefits

As observed in the Real Results Challenge and reported in research literature, the benefits of feeding ReaShure extend far beyond just increased milk production. Improving the liver's ability to process the NEFA surge experienced during transition helps cows avoid metabolic disease, providing for a smoother start to their lactation.

What is My Return on Investment (ROI) When Feeding ReaShure?

ReaShure is fed only during the 42-day transition period (21 days pre-fresh to 21 days post-fresh) to help cows transition more smoothly into lactation. Recent research shows, and field studies confirm, the benefits of a smoother transition are maintained throughout the entire lactation. The table below (Table 2) demonstrates a potential return on your investment based on the results seen in the University of Florida study (Zenobi et al., 2017 in press).

Table 2

EXAMPLE

INVESTMENT	lbs Fed	Cost/lb	Total Cost	REVENUE	Additional Milk	Milk Price	Total
Additional Feed (305 days ²)	470 lbs ³ x	\$0.10 =	\$47.00	4.6 lbs milk x 305 days ⁴ =	1,403 lbs	x \$ 0.17 =	\$238.51
ReaShure (42 days)	5.55 x	\$2.50 =	\$13.87				
Investment			\$60.87				

only \$0.05/day¹

Revenue	Investment	Return/Cow
\$238.51	- \$ 60.87	= \$177.64

No. Cows	Return/Cow	Total Return
500	x \$177.64	= \$88,820

¹When factored over 305 days of response
²15 week results extrapolated over 305-day lactation
³1.54 lbs x 305 days
⁴40 week results extrapolated over 305-day lactation

CALCULATE YOUR RETURN

INVESTMENT	lbs Fed	Cost/lb	Total Cost	REVENUE	Additional Milk	Milk Price	Total
Additional Feed	470 lbs ³ x	\$	= \$	4.6 lbs milk x 305 days ⁴ =	1,403 lbs	x \$	= \$
ReaShure in Transition	5.55 x	\$	= \$				
Investment			\$				

Healthy cows eat more feed!

Revenue	Investment	Return/Cow
\$	- \$	= \$

No. Cows	Return/Cow	Total Return
	x \$	= \$

How Does ReaShure Compare to Other Widely Used Products?

With the tremendous number of feed additives on the market today, it's important to compare costs and potential returns (Table 3). Your investment in ReaShure is limited to the short 42-day transition period but benefits extend throughout the entire lactation, significantly impacting milk production and ROI.

Table 3

	Cost \$/d	Milk Yield lb/h/d	Increased Milk Income \$/h/d ²	ROI
ReaShure	\$0.05 ¹	4.60	\$0.78	16 - 1
Monensin	\$0.03	1.54	\$0.26	8 - 1
rBST	\$0.45	10.00	\$1.70	4 - 1
Rumen Bypass Fat	\$0.60 ³	4.50	\$0.77	1.3 - 1

¹Cost calculated per day for a 305-day lactation.

²Milk Price \$0.16/lb

³1 lb feeding rate.



Summary

The success or failure of an entire lactation is often determined during the 42-day transition period. The health and well-being of the cow during the transition period will determine the amount of peak milk production, which in turn will predetermine the height and trajectory of the remaining lactation curve. Furthermore, very little can be done to positively alter that trajectory once the peak has been attained.

The key to maximizing milk production starts with investing your time, effort and resources during the transition period. Focus on those management practices that impact cow comfort, health and productivity. Include ReaShure® *Precision Release Choline* during the short 42-day transition window to help fuel a successful launch, high peak and elevated flight path for her lactation.



Balchem ANH – Americas Region
52 Sunrise Park Road
New Hampton, NY 10958

Toll-free 845-326-5600
E-mail anh.marketing@balchem.com
Website BalchemANH.com

ReaShure is a trademark of Balchem Corporation © 2021 Balchem Corporation. All rights reserved.
2102-027 | 2021.02.23 Q500

