

“ **SCIENTISTS  
SAY**

Choline is  
a Required  
Nutrient for a  
**Healthy Transition**

“ *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

The transition to lactation is a metabolically challenging period for a dairy cow as they biologically prepare for calving and the onset of lactation. ReaShure® Precision Release Choline has a 25-year track record of helping cows make a healthy transition from the dry period into a prosperous lactation.

- Approximately 180 cows per treatment
- Incidences of clinical ketosis, mastitis and morbidity were significantly reduced ( $P < 0,10$ ) in ReaShure-fed cows
- Though not statistically significant, metritis, DAs and mortality were all reduced by more than 25% in ReaShure-fed cows

- Study evaluated health benefits from ReaShure in a large commercial dairy
- The percent of cows involuntarily leaving the herd by 300 DIM was significantly ( $P < 0,05$ ) reduced by 15,4% in cows fed ReaShure
- Death loss by 300 DIM was reduced by 30% in cows fed ReaShure

- Liver fat accumulation decreased linearly with increasing doses of ReaShure
- Choline enhances the liver's ability to package and export fat out of the liver
- Managing liver fat accumulation during transition can help reduce the negative effects of fatty liver on cow health

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. ReaShure-XC is backed by new research demonstrating that choline is a required nutrient for essentially every cow regardless of milk production level, body condition score or health status.

Visit [Balchem.com/ReaShure-XC](https://Balchem.com/ReaShure-XC) to learn more.

## HEALTHY TRANSITION

Table 1 The effects of feeding ReaShure during transition on health disorders

	Control Average, %	ReaShure Average, %	% Reduction	P Value
Retained Placenta	10,8	10,0	7,4	0,72
Fever	31,7	33,0	-3,9	0,77
Puerperal Metritis	3,7	4,4	-19,2	0,69
Metritis	12,8	9,6	25,4	0,33
Clinical Ketosis	11,9	4,1	65,4	<b>0,01</b>
Displaced Abomasum	3,9	2,5	37,2	0,77
Mastitis	22,1	15,3	30,6	<b>0,06</b>
Morbidity	57,4	39,3	31,6	<b>0,001</b>
Mortality	6,6	3,5	46,6	0,27
Left Study	9,6	7,2	25,5	0,63

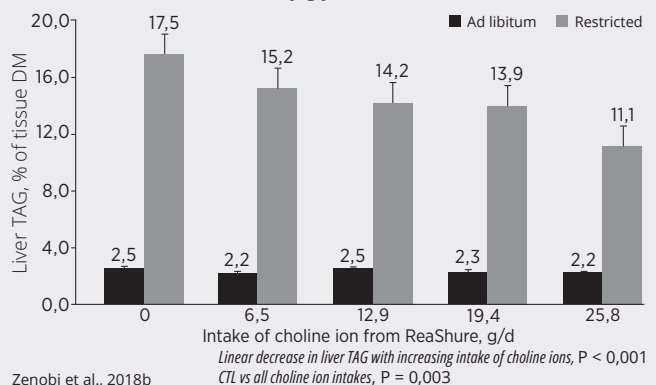
Lima et al., 2012

Table 2 Effect of feeding ReaShure prepartum on health events

	Control Average, %	ReaShure Average, %	% Reduction	P Value
Retained Placenta	4,4	4,5	-3,4	0,9
Metritis	21,8	23,2	-6,4	0,62
Milk Fever	1,9	0,8	60,5	<b>0,08</b>
Mastitis	4,6	5,0	-7,6	0,47
Morbidity	31,9	33,4	-4,5	0,62
Multiple Diseases	7,1	5,4	24,6	0,12
Subclinical Disease				
Hypocalcemia	51,4	54,3	-5,6	0,49
Hyperketonemia	18,8	18,9	-0,5	0,96
Left Herd by 300 DIM	29,2	24,7	15,4	<b>0,05</b>
Sold	26,2	22,6	13,7	<b>0,08</b>
Mortality	3,0	2,1	30,0	0,92

Poindexter et al., In Review

Figure 1 Effect of increasing intake of choline ion from ReaShure on liver concentration of triacylglycerol



Zenobi et al., 2018b

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



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Balchem manufactures two versions of their rumen-protected choline product. ReaShure and a more concentrated form called ReaShure-XC. Both are designed to provide approximately 13 g/d choline ion when fed at the recommended feeding levels (ReaShure = 60/g/h/d, ReaShure-XC = 30 g/h/d). One or both of these products were used in the following trials.