



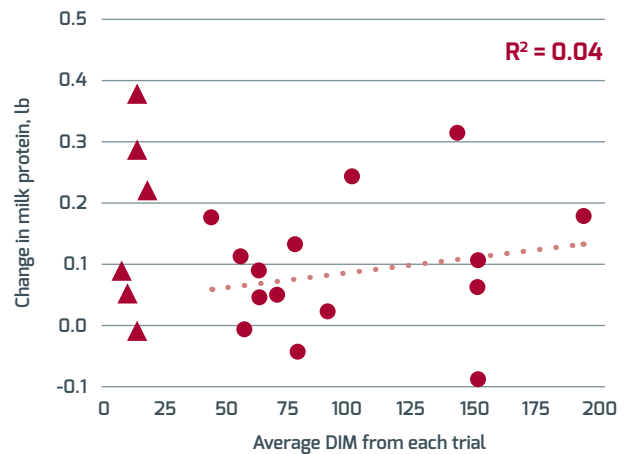
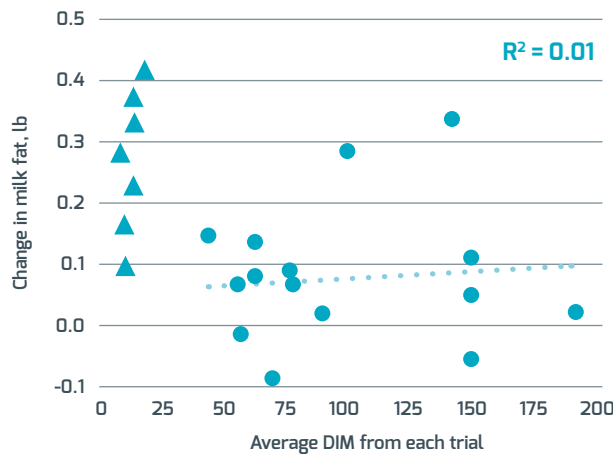
Does stage of lactation affect how cows respond to methionine supplementation?

After 30+ years studying methionine requirements in dairy cows, Adisseo has gathered enough data to better answer this question. A summary of peer-reviewed dairy cow studies supplementing Smartamine® M in methionine-deficient diets monitoring responses in feed intake, milk fat and protein is presented below. Average responses from each trial were plotted against the average days in milk (DIM) for each study and then broken down by transition cow studies (<35 DIM; ▲) and postfresh studies (>35 DIM; ●). The average supply of absorbable methionine from Smartamine M was 11.5 ± 3.6 g/hd/d.

Relative changes in lbs of feed intake, milk protein and milk fat in Smartamine® M trials by stage of lactation.

STAGE OF LACTATION	MILK FAT	MILK PROTEIN	FEED INTAKE
WHOLE LACTATION (WEIGHTED AVG)	+ 0.1 lb	+ 0.1 lb	+ 0.27 lb DM
< 35 DIM	+ 0.28 lb	+ 0.18 lb	+ 2.8 lb DM
> 35 DIM	+ 0.08 lb	+ 0.09 lb	0.0 lb DM

Relative changes in lbs of milk fat (left) and milk protein (right) in Smartamine® M trials by DIM. Each symbol represents the average response and DIM for each trial.



Continued next page ➤



Contact your Adisseo representative to learn more!

<https://milkpay.com/contact/>



Continued >

Smartamine® M Improves Feed Intake and Performance in Early Lactation

Larger responses to methionine supplementation in milk protein and milk fat were seen in <35 DIM relative to >35 DIM studies. One major finding across these trials was a substantial improvement in feed intake with methionine supplementation in early lactation trials, with no changes in postfresh studies. Further analysis demonstrated that feed intake and milk solid yield responses to methionine feeding were only correlated ($R^2 > 0.72$) in the <35 DIM trials. This feed intake pattern appears to explain a large part of the differences in milk protein and milk fat responses from methionine feeding between these two lactation stages.

Smartamine® M Supports Immune Status and Health in Early Lactation

Methionine enhances the ability of the mammary gland to produce milk protein and milk fat in all lactation phases, but it is not hard to infer how this nutrient can have a greater impact on early lactation performance. Dairy cows undergo oxidative and inflammatory stress during the transition from gestation to lactation and methionine is key to producing natural antioxidants such as glutathione and taurine. These antioxidants are the basis for the cow's antioxidative defense, helping to reduce the exacerbated inflammatory responses commonly observed in this phase. Healthier cows are able to eat more and produce more.

Smartamine® M Enhances Performance Throughout Lactation

Interestingly, in the >35 DIM studies, days in milk were no longer an important ($R^2 < 0.04$) factor in explaining responses to methionine. This might suggest that the gap between supply and demand of methionine does not decrease as lactation progresses and supplementation is still important later in the lactation. The trial of Chen and Broderick, 2011 supports this suggestion. Cows averaged 150 DIM at the beginning of the study and 230 days at the end. Energy-corrected milk increased by 1.8 lb/day in cows fed a negative protein balanced diet supplemented with Smartamine® M relative to cows fed a positive protein balanced diet but deficient in methionine (typical diets in the United States). Understanding how nutritional and physiological factors interact with cows' response to methionine supplementation is an ongoing goal within Adisseo.

CONCLUSION

Supplementing methionine in methionine-deficient diets helps to improve lactation performance in all stages of lactation. Stay tuned for our next series of Smartmails demonstrating how to financially account for gains in milk solids, health, and fertility with Smartamine M.

Contact your **Adisseo** representative to learn more!



<https://milkpay.com/contact/>



Copyright © Adisseo Inc. 2024 | Stage of Lactation_NA_08/24



ADISSEO
A Bluestar Company

www.adisseo.com | milkpay.com