



# Since when has milk fat been impacted by amino acids?

## Summary

- Milk fat yield is a large component of Dairy Producer profitability
- Research shows methionine has a considerable positive impact on milk fat synthesis
- Increases in BOTH milk fat and milk protein should be considered when calculating IOFC and balancing for AA

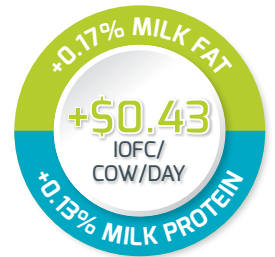
In our previous *SmartMail*, we presented a compilation of trials in which cows were fed supplemental methionine, indicating a positive response in milk fat and protein to a similar extent. A summary of the mode-of-action is also discussed therein.

Most of our audience was positively surprised and intrigued by the milk fat responses. So, since when has milk fat been impacted by amino acids?

To answer this question, we revisited the literature and looked at responses in milk fat obtained in earlier studies that supplied free methionine (DL-Met) directly into the abomasum or duodenum. Interestingly, a similar positive trend was observed. The average response in milk fat from those early

infusion studies was 0.10%, whereas more recent Smartamine® M trials showed an overall increase of 0.17% (Figure 1). Apparent differences may include 1) differences in the supply-requirement gap of these cows; 2) statistical design used; or even 3) recent advances in amino acid balancing which may have helped to capture the most out of this feeding strategy.

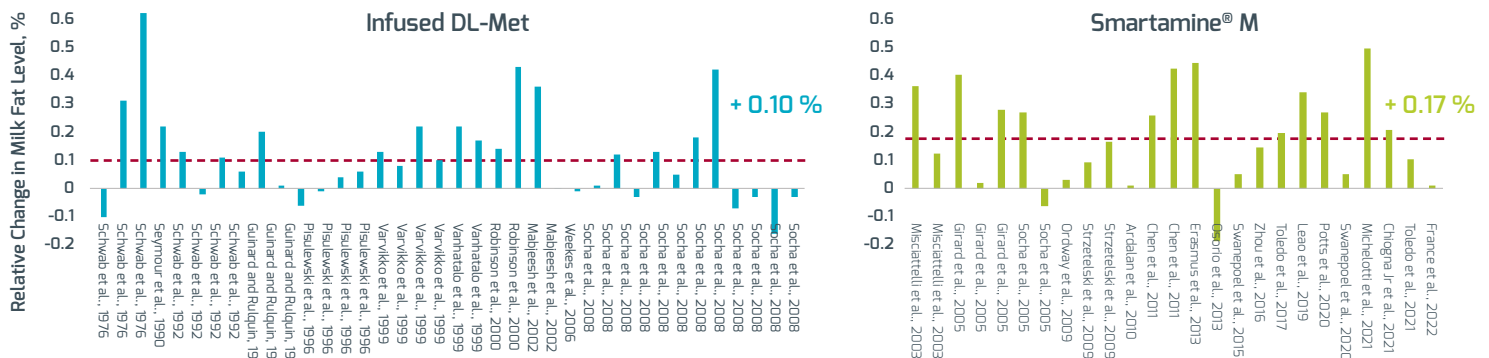
Milk fat pricing continues strong (\$2.9765/lb; as of Feb 7, 2024) requiring attention to strategies that boost milk fat synthesis. Using current component pricing (available at milkpay.com), an increase of 0.17% in milk fat and 0.13% in protein concentration is expected to yield a total of \$0.63/cow/day (fat + protein). This results in an **income over feed costs of \$0.43/cow/day**.



**Make sure you are formulating diets with a proper amino acid balance using current nutrition models for an optimal response in both milk fat and protein.**

We are happy to discuss how you can feed to meet requirements, adopt amino acid balancing, and capture these milk fat responses in your herd.

**Figure 1. Overall average response to infusing free methionine (~14 g mMet; left side) or feeding Smartamine® M (~11 g mMet; right side) to lactating cows over the years (treatment vs. control)**



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

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