



Smartamine® M Stands Up Against Competitor in On-Farm Demonstration

Milk components and blood biomarkers associated with methionine status were evaluated in an on-farm demonstration after cows were fed two rumen-protected methionine products. Product A had been in use on the farm and was fed to April 20th, 2023. Smartamine M was fed from April 21st to May 5th, 2023.

Cows fed Smartamine M maintained performance, showed improved methionine status, and had a ration at a substantial cost savings of \$0.10/hd/day.

A Smart way to protect your margins.

The bioavailability and efficacy of rumen-protected products can be evaluated using several different methods. However, the gold standard is the plasma free-AA dose-response method developed by the University of New Hampshire (UNH method). For the current demonstration, ration parameters were evaluated relative to 1) manufacturer specs and 2) bioavailability data from the UNH method.

- At the current feeding rate, Product A should provide 14.8 g metabolizable methionine (mMET) per cow per day according to the manufacturer’s specs, but it is likely supplying only 7.2 g mMET per cow per day based on data from the UNH method.
- Smartamine M will supply 10.1 g mMET per cow per day at the proposed feeding rate based on data from the UNH method. However, cows fed Smartamine M will have an additional 2.9 grams of mMET compared to cows fed Product A (see table).

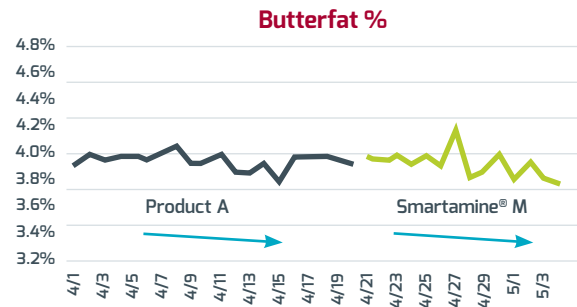
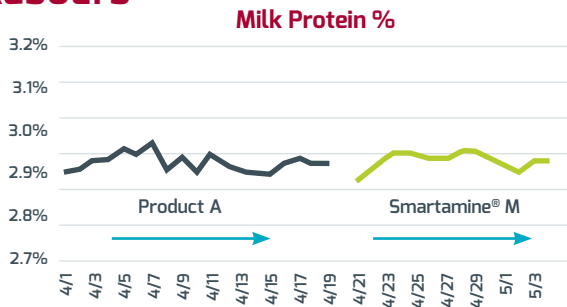
	CURRENT DIET	ADJUSTED SPECS	PROPOSED DIET
	Basal diet + Product A (Manufacturer Specs)	Basal + Product A (UNH Method)	Basal + Smartamine® M (UNH Method)
Methionine supply	+14.8 g	+7.2 g	+10.1 g
Diet mMET, g/Mcal ME	1.07	0.97	1.01
Diet mLYS, g/Mcal ME	3.04	3.04	3.04
Cost, \$/cow/d	Reference	Reference	-\$0.10

For reference, Cornell University recommends feeding 1.15 grams of mMET per Mcal of ME (CNCPS v.6.5.5); thus, at these feeding rates none of the products were overfed, which guarantees a fair comparison.

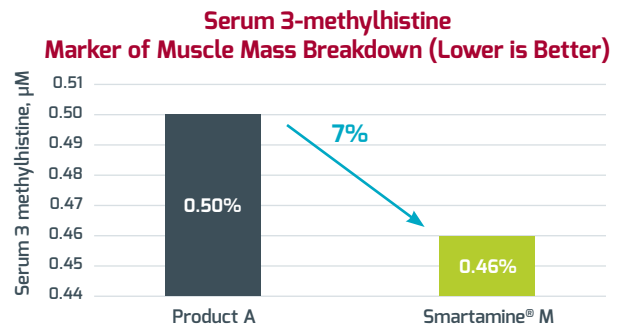
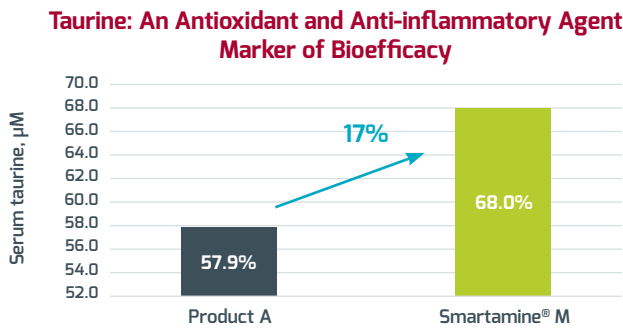
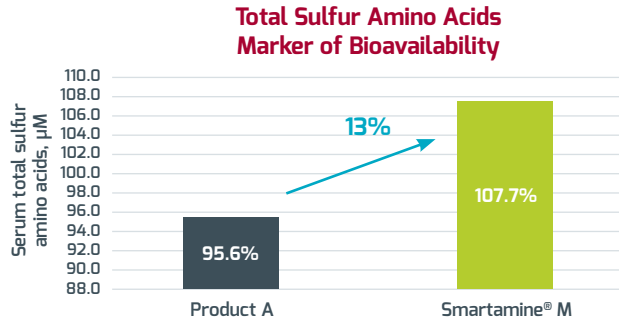
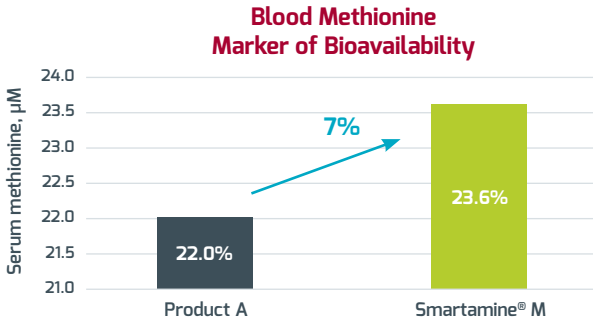
To ensure cows were in steady state and to reduce variation, blood samples were collected after at least 15 days on product and at the same time each day from the same 20 cows. Days in milk for this subset of cows varied from 60 to 80 days.



RESULTS



As anticipated, milk components in the tank were maintained for cows supplemented with Smartamine® M. The expected seasonal milk fat percentage decline was seen during both feeding periods.



Relative to product A, the results from blood analysis demonstrated that cows supplemented with Smartamine M had a:

- **7% increase** in serum methionine and **13% increase** in serum total sulfur amino acids which indicates higher product bioavailability.
- **17% increase** in serum taurine, an antioxidant and anti-inflammatory agent. Methionine is a direct precursor of taurine in the liver. The higher level of taurine indicates greater bioefficacy.
- **7% decrease** in serum 3-methylhistidine, a marker of muscle mass breakdown. A lower level is better.

CONCLUSION

These findings demonstrate that Smartamine M is the most cost-efficient rumen-protected methionine product on the market and delivers a greater supply of absorbable methionine with a ration cost savings of \$0.10 per cow per day.

Amino acid balancing with Smartamine M can help reduce ration costs and **optimize performance.**

