



Smartamine[®] M METHIONINE, AN ESSENTIAL NUTRIENT

In all dairy rations, there is a shortfall in the amount of methionine available compared to the methionine requirement.

Smartamine® M is the industry standard for encapsulated methionine.



PROTECTED IN THE RUMEN. RELEASED IN THE ABOMASUM.

Rumen protection is necessary because dl-methionine is degraded in the rumen. The Smartamine® M technology is adapted to ruminant digestive processes. The methionine is protected in the rumen, then absorbed in the small intestine, ensuring high methionine bioavailability.



OFFERS EXCELLENT BIOAVAILABILITY

The three keys to the success of Smartamine® M:

- High level of rumen protection
- Complete release in the abomasum
- Total absorption in the small intestine



Smartamine[®] M coating protects the methionine from rumen fermentation. When exposed to the acidic conditions in the to be absorbed in the small intestine.





Smartamine[®] M:

- is easily mixed into mineral feeds, protein feeds, and grain mixes*
- cannot be pelleted

* See Users Guide for detailed mixing procedures

Abomasum Small intestine



The acid pH of the

MEETING METHIONINE REQUIREMENTS Milk is Just the Tip of the Iceberg

ENERGY CORRECTED MILK (ECM)

Optimal ration concentrations of methionine and lysine maximize milk volume, protein and fat

PROTEIN SYNTHESIS

Methionine is the key

amino acid needed to initiate protein synthesis

LIVER HEALTH

Methionine plays a key role in the formation of VLDLs* to export fat out of the liver

MORE

THAN

MILK

ANTIOXIDANT

Methionine is the precursor of taurine and glutathione, a very important antioxidant

EPIGENETICS

Methionine influences fetal programming through methylation of DNA



*Very low density lipoproteins

Methionine: More than Milk

IMPROVES PRODUCTION





IMPROVES HEALTH

Supplemental methionine helps limit metabolic problems. This promotes peak milk, saves costs, and reduces early culling.

Methionine Promotes Health

Disease	Control	Methionine	Decrease (%)
Displaced Abomasum	7/162 (4.3%)	6/170 (3.5%)	18
Ketosis, Clinical & Subclinical**	29/162 (17.9%)	17/170 (10.0%)	44
Mastitis	23/138 (16.7%)	15/138 (10.9%)	35
Metritis	16/138 (11.6%)	9/137 (6.6%)	43

Data from three trials sponsored by Adisseo: Osorio et al. (2013) J. Dairy Sci. 96:6248-6263, Stangeferro et al. (2017) and Zhou et al. (2016) J. DairySci. 99:8716-8732.

** Clinical and subclinical ketosis numbers are combined as per the supporting research.

IMPROVES REPRODUCTIVE EFFICIENCY

More pregnancies maintained. Losses were reduced from 19% to 7% between pregnancy check #1 and #2*.

- Lower Average Days in Milk
- Less Re-breeding
- Less Culls

* Calculated using Adisseo MilkSmart® App.

Reduced pregnancy losses, days 28 to 61 after timed artificial insemination



SIX PROVEN STEPS TO SUCCESSFUL AMINO ACID BALANCING

By reaching the target concentrations for lysine and methionine, the daily metabolizable protein (MP) supply can be decreased by 100 to 150 grams. This economizes on expensive rumen undegradable protein (RUP) and creates formulation space for other nutrients that can further enhance cow performance.

Feed a balanced ration that provides a blend of fermentable carbohydrates and physically effective fiber to optimize the yield of microbial protein and optimize rumen health.

Minimize Rumen Undegradable Protein inclusion, as on average, RUP has lower concentrations of both lysine and methionine than microbial protein.

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Include a rumen protected methionine source to achieve the optimal ratio of lysine to methionine.



ADISSEO France S.A.S Immeuble Antony Parc 2 10, Place du Général de Gaulle 92160 Antony Tél. : 33 (0)1 46 74 70 00



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Feed adequate levels of Rumen Degradable Protein (RDP) to meet the rumen microbial needs for amino acids and ammonia. Do not feed excessive RDP.

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Include high-lysine protein ingredients and a rumen protected lysine as needed to reach the target formulation level of lysine as a % of MP.

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Be sure the Plasma Free-Amino-Acid Dose Response Method has been used to validate the efficacy of the rumen protected sources of lysine and methionine used.