



With **ExpandaTherm™** technology

By: *Les Berghorn, General Manager*

## METHIONINE REQUIREMENTS MAY BE GREATER THAN WE THOUGHT

We all know that methionine is often the first limiting amino acids for dairy cows, and that often cows respond to supplementation: numerous studies have shown us this. Recent research conducted at the University of Illinois, under the direction of Drs. Juan Looor and Jim Drackley has highlighted the importance of this nutrient for both health and reproduction. Nutritional models compute the methionine needs of the cow from the milk content, as well as the content in tissue which is used to calculate the requirements of this nutrient for growth, fetal growth and maintenance.

Methionine has a number of other important uses. With respect to protein synthesis, methionine can be used to synthesize the semi-essential amino acid, cysteine. Non-ruminant nutritionists recognize the importance of quantifying both methionine and cysteine in diets and ingredients. Cysteine is present in high concentrations in structural proteins. It is also a key component of a large number of enzyme systems, and in particular those that are required to bind enzymes. When dietary provisions of this nutrient are inadequate, it is synthesized from methionine. With models not including cysteine, we do not know how much methionine might be used to synthesize this nutrient.

Methionine is used in methyl donor reactions. The requirement for this purpose can change, depending on the availability of other methyl donor nutrients, such as choline and folic acid.

Methionine is also important for phospholipid synthesis. Methionine acts as a transport system to allow lipids to be moved to and from tissues, and has been shown to help increase milk fat yield.

Methionine can be supplied from a number of excellent rumen protected products. However, these require special handling, particularly when grinding or pelleting feeds. AminoMax Pro is another more flexible source of methionine. It provides almost as much as higher protein animal proteins, and more than other vegetable proteins.

**Comparison of amounts (lbs.) of each product that would be needed to supply 10 grams of metabolizable methionine.**

Product	Grams/pound	Pounds needed
High RUP soybean meal 1	1.67	6.00
High RUP soybean meal 2	1.93	5.17
High RUP soybean meal 3	1.50	6.66
Blood meal	2.38	4.21
Animal Protein Mix	2.84	3.52
AminoMax Pro	2.65	3.77



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## CANOLA MEAL IN EARLY LACTATION

Most studies that have been conducted with canola meal compared to other protein sources have involved mid-lactation cows. A feeding trial involving cows in early lactation, rather than mid or late lactation was completed at the USDA Dairy Forage Research Center by researchers Spenser Moore and Kenneth Kalsheur. The results were reported at the annual American Dairy Science Meeting. In the study, protein from soybean meal was replaced by protein from canola meal. These researchers found that milk production was greater (122.5 lbs. vs. 114.2 kgs) with the canola meal diet with no differences in percentages of milk components over the course of the 16-week long study. Milk urea nitrogen was lower with the canola meal diet and feed efficiency, on an energy corrected milk basis, was improved. Combined, these parameters indicate that protein from canola meal is used very efficiently by cows in early lactation.

This suggests that canola meal gets cows off to a good start, due to its superior amino acid profile. This effect is taken advantage of in AminoMax, where the canola meal is treated to insure high digestibility, and high rumen bypass.

## SIX REASONS WHY AMINOMAX PRO IS THE LEAST VARIABLE PROTEIN YOU WILL EVER USE

1. AminoMax Pro is produced using the advance patented ExpandaTherm technology. The process is controlled by over 400 checkpoints that insure that every step of the operation is consistent, hour after hour, day after day.
2. AminoMax Pro is a unique blend of canola meal and soybean meal. Each ingredient is tested upon arrival. Each ingredient has a unique set of processing requirements, to ensure the outcome is consistent. Each ingredient is processed through our plant *separately* then blended to take full advantage of the ExpandaTherm technology.
3. Unlike expellers and extruders, our expanders reduce the particle size of the meals to a very fine and uniform size. This increases the surface area and allows the particles to react to the enzymes and sugars added during the process.
4. Moisture is controlled throughout the process, and is a key component of insuring consistency of the reactants.
5. Temperature is optimized to likewise make sure that the reactions take place exactly as designed by the ExpandaTherm process.
6. Crumbles can be formed without pelleting, to improve mixing with other ingredients during feed formulation.



WANT TO KNOW MORE?  
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