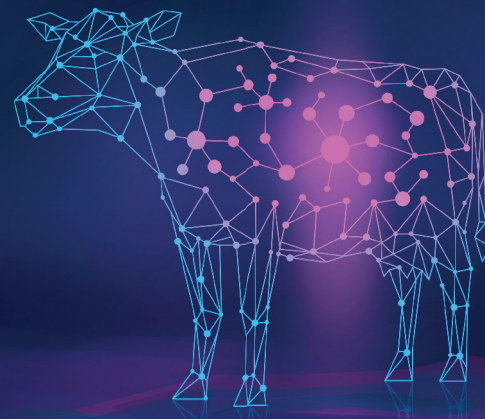


AMINO ACID OUTLOOK

September 2025



WHY FEED RUMEN-PROTECTED AMINO ACIDS?

A cow's biology and genetics dictate her milk production potential. Due to the increased use of genomics, the pace of genetic progress has accelerated in recent years. This has allowed milk production potential to be even greater. However, are we feeding dairy cows to match their genetic potential? And are we enabling cows to reach this potential?

Today's dairy cows have the potential to achieve more with better nutrition, yet their ability to physically consume enough nutrients often lags behind their rising requirements.

Amino acids are the building blocks of protein – they are bonded together in chains to form proteins. Each type of protein has its own unique combination of amino acids. Depending on the amino acids present, various proteins can be synthesised.



Therefore, we can say cows have an amino acid requirement, rather than a protein requirement. Typically, we try to meet these requirements through overfeeding crude protein. This is an inexpensive approach, but results in nitrogen wastage, inefficiency, and poor environmental footprint.

More recently protein quality, price fluctuations and environmental pressures have had more influence on how cows are fed. Rumen-protected amino acids (RPAAs) should be considered as a method of feeding cows more efficiently. By meeting amino acid requirements, a more targeted approach to protein nutrition can be achieved with the potential to increase milk yield and protein, while reducing inefficiency of feeding and improving farm profitability.

Learn more by calling +44 (0) 2894 473 478





WHAT COWS REALLY NEED

Put simply, cows need amino acids to produce milk and body proteins. When crude protein is fed, much of it breaks down in the rumen into nitrogen and amino acids, before reforming as microbial protein. This microbial protein (the least expensive way to deliver amino acids), then flows to the hindgut for absorption by the cow. This process can be maximised by ensuring rumen conditions optimise microbial growth in the rumen. It is also possible to add bypass protein to the diet. This is protein that passes through the rumen without being fermented and is instead absorbed in the hindgut.

However, there is a challenge; if amino acid supply is not optimal, performance can be at risk. Cows have the ability to redirect amino acids from immunity, fertility, or milk protein production to maintain production, but this is still limited by overall amino acid supply. Methionine is the first limiting amino acid, with 95% of European dairy diets demonstrating methionine deficiency. Lysine is generally considered to be the second limiting amino acid for milk production.

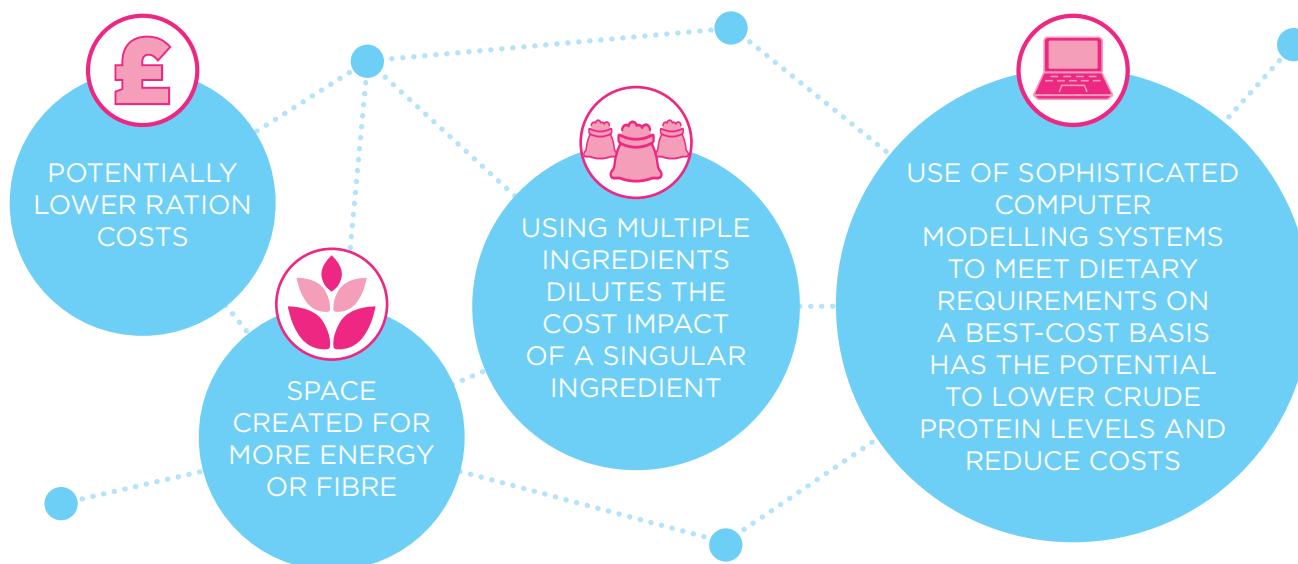
STRATEGIES FOR USING RPAAS: SUBSTITUTION OR PARTIAL REPLACEMENT



BALANCE THE RATION TO INCREASE MP-LYSINE AND MP-METHIONINE

Perhaps the most versatile and effective way to use RPAAs in dairy rations is to use ration software to specifically formulate diets for amino acid requirements through substituting or partially replacing feedstuffs with lower levels of lysine and methionine with RPAAs, which offer higher concentrations of these essential amino acids.

THE BENEFITS ARE NUMEROUS:

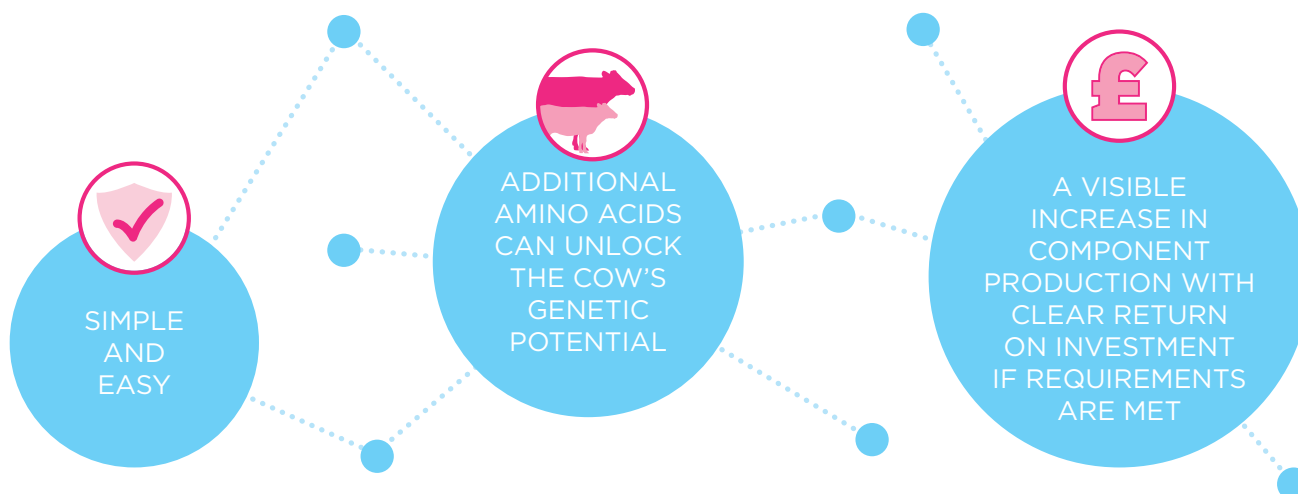


Success of this method is based on meeting any amino acid shortfall, ensuring the correct ratios of lysine to methionine, and amino acid per unit of energy. This creates dietary space, allowing more energy and fibre to be added to help reach genetic potential.

2 ADD RPAA's ON TOP OF THE EXISTING RATION

The most commonly used approach for feeding RPAA's is to simply add them in addition to or "on top" of the current ration being fed, with the goal of increasing milk and milk component production.

THE BENEFITS INCLUDE:



What are the drawbacks of this approach? It is more expensive, and a solid performance increase is required to achieve a return on investment to justify it. This can be difficult to measure on busy commercial farms with many variables.

THE BOTTOM LINE

RPAA's offer multiple method to boost cow performance and genetic potential. They can be used simply as ingredients to fine-tune rations and boost performance. There is an increasing requirement from the industry to produce higher-quality milk with less environmental footprint, while contending with variable ingredient prices, quality, and supply. High-quality RPAA's, like AminoShure-XM (38% metabolisable methionine) and AminoShure-L (24.3% metabolisable lysine), bring consistency and cost-effectiveness to diets, stabilising rations in a volatile market.

In summary, RPAA's aren't just about feeding better, they about feeding smarter. They align nutrition with genetics, allowing cows to reach their potential, while maintaining farm profitability and environmental sustainability. With AminoShure, there is significant opportunity to close the gap between what cows have the potential to do and what we're helping them to achieve.