FEEDINFO PERSPECTIVES

ADISSEO A Bluestar Company

Adisseo Stresses Importance of Amino Acid Balancing in Fight to Meet Dairy Sustainability Goals – INDUSTRY PERSPECTIVES

Adisseo continues to reaffirm its position as a valuable partner to the dairy industry and its producers. Most notably, the company is helping the industry address key climate and sustainability challenges through the adoption of the nutritional practice of amino acid balancing. Adisseo says the practice is unique as it improves farm income in parallel with addressing environmental concerns and carbon emissions.

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Feedinfo spoke to Dr. Sion Richards, Senior Ruminant Technical Manager for Europe, and Amel Hocini, Head of Sustainability and Projects, Adisseo, to find out more about the benefits of amino acid balancing in dairy cow diets and how it fits in with Adisseo's sustainability goals.

[Feedinfo] To start off with, can you provide an overview of Adisseo's commitment to sustainability and, in a nutshell, let us know what the main priorities are?

[Amel Hocini] At Adisseo, sustainability is now the second core value after safety in Adisseo's daily business practices. Our business going forward will be governed by aggressively pursuing all opportunities to reduce the carbon footprint of our industrial plants. Our focus will be on product development that will allow our customers to feed humankind in an affordable, nutritious, and sustainable way, while reducing both the environmental impact and carbon emissions.

Greenhouse gas emissions - the sum of direct emissions from industrial activities and indirect emissions from energy purchases - have decreased significantly since 2020, by 40 kt. We favour renewable energies with more than 55% of the company's total electricity purchases having renewable or decarbonised origins.

Amel Hocini,
Head of Sustainability and Projects
Adisseo

To advance the cause of sustainability in the animal protein industry, Adisseo actively participates in feed industry initiatives such as the Global Feed LCA Institute (GFLI) whose extensive database serves as the leading reference for information about the environmental performance of feed ingredients. Adisseo is active in various working groups such as the EU Association of Specialty Feed Ingredients and their Mixtures (FEFANA) as well as the International Feed Industry Federation (IFIF).

Adisseo collaboratively engages with industry partners on Life Cycle Assessments (LCAs). Each LCA offers a holistic view of a product's environmental impact all along the feed and food value chain. This collaboration contributes to the broader industry's collective efforts toward sustainability by investigating and improving on the areas where emissions can be measured and mitigated.

Particularly in the dairy sector, where Adisseo is the market leader in providing amino acid balanced solutions, we take it as our obligation and duty to the industry we serve to go beyond the boundaries of being a good supplier. We actively collaborate with partners to imagine and implement solutions where a reduction in nitrogen inputs and careful management on dairy farms can dramatically improve environmental concerns, reduce carbon emissions, and maintain and even increase profitability of dairy enterprises.

[Feedinfo] Looking more specifically at carbon emissions, which has put dairy farms under a lot of scrutiny, what are the benefits of amino acid balancing?

[Dr. Sion Richards] Dairy farms lower the ration's carbon footprint by opting for locally sourced feedstuffs, amino acid balancing and using rumen-protected amino acid sources such as Smartamine® M or MetaSmart® as a trustworthy source of rumen protected methionine.

In parallel, dairies can reduce the diet's crude protein level to avoid overfeeding protein, an unnecessary safety factor. This leads to many benefits. Nitrogen use efficiency increases and nitrogen excretion decreases, which reduces the nitrous oxide level in manure. In general, the carbon footprint decreases by 10% for each 1% decrease in the crude protein level. Increasing energy feeds and locally sourced feedstuffs likewise benefit the carbon footprint.

Dr. Sion Richards
Senior Ruminant Technical Manager
Adisseo

Other reductions in the carbon footprint can follow as cows experience enhanced lifetime performance due to improvements in their production levels, health status, reproductive performance, and herd longevity. The dairy receives a payback in cost savings from the reduced protein level fed and increased income from the enhanced lifetime performance.

This level of precision nutrition requires formulation and analytical tools that allow precise formulation. Several ration formulation software programmes are readily available for use by dairy nutritionists.

[Feedinfo] Can you put into context the importance of amino acid balancing on reducing carbon emissions relative to methane mitigation strategies?

[Amel Hocini] Amino acid balancing is a complementary strategy to methane mitigation strategies. It offers a more immediate and greater potential impact on not only reducing the carbon footprint but also sustaining a dairy operation's profitability.

By amino acid balancing, reducing the diet's crude protein content, and selecting feed ingredients with low carbon footprints, nutritionists can reduce the feed carbon footprint by 10% to 15% relatively easily. With periodic and total rebalancing of the ration, over time the feed carbon footprint could potentially be significantly reduced. By itself, the feed carbon footprint is approximately 40% of the total dairy carbon footprint.

When you add in the longer-term impacts of fertility, health, and longevity, then the total feed carbon footprint per kg of milk can be reduced by over 50%. In a recent farm experience, for example, the measured/audited carbon footprint dropped from 1447 g to 807 g of CO2 per kg of milk due to precision formulation with amino acids.

To put this into a European-wide context, let's consider what happens with a reasonable assumption of similar improvements with amino acid balancing and the best methane mitigation strategies, of 15% each, i.e., 30% in total. For the 20 million EU dairy cows the result would be an estimated decrease of over 30 million tonnes of CO2 equivalent. That is equivalent to removing 7.2 million cars off the road, disconnecting the power in 4.1 million houses, or growing more than 500 million tree seedlings for 10 years.

Amino acid balancing appears to be one of the most powerful tools already available to respond to the global necessity to reduce the carbon footprint of our dairy industry.

[Feedinfo] Adisseo claims that with amino acid balancing, dairy farmers "receive a payback" to formulating more sustainable rations. Can you expand on that claim? Do you have any specific examples of producers being rewarded by better performance and receiving a premium price for their milk sales?

[Dr. Sion Richards] The challenge many sustainability objectives face rests with who pays and who benefits. The beauty of amino acid balancing is that it is a win-win situation for the producer and the planet. Amino acid balancing can reduce the ration cost and certainly increases performance through more kg of milk protein and milk fat leaving the farm for a better milk income for dairy farmers in the short term. In the longer term, improved health status, increased reproductive performance, and greater longevity from a lower culling rate each contribute to the payback on amino acid balancing. Furthermore, in some markets, dairy companies are starting to both audit and pay for nitrogen/protein efficiency and improvements in reducing the carbon footprint.

In some European dairy contracts, the benefits can be worth up to 1 cent per kg of milk. The dairy companies and consumers gain by reducing their carbon footprints to meet their respective business and personal objectives while still providing and consuming milk and dairy products that are second to none in their nutritional and health benefits.

By combining a precision nutrition approach and rebalancing diets for amino acids, certain European farms have reduced ration costs by 15-20 cents per cow per day and have increased milk revenue by 30-40 cents per cow per day.

[Feedinfo] Can you let us know about any new plans to optimise processes at Adisseo's own rumen-protected amino acid production lines which will further reduce the carbon footprint of Adisseo platforms?

[Amel Hocini] The carbon footprint of Adisseo's rumen-protected amino acid production lines is integrated into the corporate Adisseo carbon footprint. Adisseo continues to reduce greenhouse gas emissions and is committed to the carbon neutrality initiative in 2050. Its energy use intensity (GH/t all products manufactured) has decreased more than 23.8% since 2015.

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