

Adisseo Backs Adopting Net Energy Approach in Feed Formulation with New Tool

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"It has been clearly demonstrated that formulating closer to the animal needs, that is in Net Energy (NE), will improve production efficiency", the company's Director for Scientific Marketing, Pierre-André Geraert told Feedinfo during a recent chat. "This does not mean that it is necessarily the better approach but being closer to animal needs is better correlated to animal performance, and thus to production efficiency and sustainability."

And to help nutritionists make the switch, Adisseo is introducing its new tool, NESTOR. It considers the NE of various feedstuffs and the NE requirements of pigs and poultry and combines this into data that can be easily incorporated into the feed formulation process.

In this Industry Perspectives, Mr Geraert and Angélique Cayzac, the company's Applied Nutrition Technical Manager take Feedinfo through NESTOR's development process and give us a look at some of the decades-long nutritional science that powers the tool. We also discuss the findings of Adisseo's recent market survey on the uptake of the NE concept in animal

Energy is possibly the most important parameter that nutritionists need to consider during the feed formulation process. Commonly these considerations are based on either digestible energy or metabolizable energy to determine the energy potential of feed. However, Adisseo believes that this might not be the best way to formulate and is advocating for a switch to Net Energy formulation.

nutrition and why nutritionists have been slow to adopt it.

[Feedinfo] Why has Adisseo, a feed additives company, decided to weigh in on the Net Energy vs digestible or metabolizable energy debate?



Pierre-André Geraert
Director for Scientific Marketing
Adisseo

[Pierre-André Geraert] Being a nutritional solution provider, Adisseo has been involved for a long time in feed formulation. We have been giving values and recommendations for years with our RNG (Rhodimet Nutrition Guide) and e-RNG tool. When developing our nutritional recommendations for using enzymes in feeds, we have long been concerned by the various systems of feed formulations. Our Predictor software allows to adjust nutritional recommendations to the feed composition and thus anticipate the potential benefits. We also have our PNE (Precise Nutrition Evaluation) platform, which allows users to evaluate batches of feedstuffs to get closer to the day-to-day usage with the addition of data on antinutritional factors. With more than 20 years of expertise in this field, providing recommendations in NE is the next logical step for Adisseo, which has always sought to be as close as possible to the reality of nutrients and animal needs.

[Feedinfo] Tell me about the market survey which you have conducted to establish the uptake of the Net Energy concept within different parts of the animal nutrition industry.

[Pierre-André Geraert] To be clear, we conducted this survey regarding the use of NE only in swine feed formulation, as the concept was developed for pigs in the early 90s. The equations allowing for the calculation of NE values of ingredients based on digestible energy (DE) were developed by Dr. Jean Noblet from INRA and published from 1994. We thus considered usage in swine as a good benchmark of its development.

Feed producers, integrators, consultants

and professors worldwide were questioned. In fact, two studies were conducted. The first one, developed by a specialized company, was used to investigate the usage of NE in pig feed formulation in different countries and regions, including the USA, Brazil, several European countries, and several Asian-Pacific countries. A second one was performed by an international swine institute and concerned the EU (Spain, Germany, France, Netherlands, Denmark and Poland), the Americas (USA, Brazil and Canada), and Asia (China, Thailand, Vietnam and the Philippines).

As the survey concerned swine, we were surprised by the global output revealing about only 50% of the swine industry was using NE. Europe has largely adopted the system, even if other systems have been kept around in some European countries. But other regions or countries with large swine production are not yet using NE in their feed formulation, including Brazil, Thailand, USA, Russia, etc.

[Feedinfo] What else has Adisseo's involvement in this topic consisted of?

[Pierre-André Geraert] Besides inquiring into the usage of NE in swine feed formulation, we organized a webinar on the topic with more than 500 connected people where we were able to refine the understanding of NE and its potential benefits. Indeed, most of the participants mentioned their interest in this NE approach, sure about the benefit being closer to the animal needs. Moreover, most of the audience was convinced about the fact that it should now be easier to convince and change in the poultry sector due to the pig experience. For the participants, the

main issue regarding the development of NE in practical feed formulation appeared to be the lack of an easy tool to evaluate the impact in feed formulation and thus to help them to move step by step.

[Feedinfo] And is this where NESTOR comes in. So, what is it and what does it offer to those making formulation and ingredient purchasing decisions?

[Angélique Cayzac] NESTOR is an easy-to-use tool to combine the NE value of ingredients and the NE requirements of different animal species. The success of the development of NE for swine in Europe in the early 2000s was connected with the support from software such as Evapig. We wanted to help advance the use of NE through a similar means by developing an easy-to-use practical tool.



Angélique Cayzac
Applied Nutrition Technical Manager
Adisseo

Not only does it bring together the NE values of all feedstuffs as well as the animal requirements in the same tool, but it also gives the Digestible Amino Acid values of all feedstuffs as well as the phytate, total and available phosphorus values.

Our objective was to make something easy to use for all poultry and swine nutritionists. It is a clear recommendation tool to help with decision making. Years ago, we developed the e-RNG to give all values of feedstuffs in terms of total and digestible amino acid values, as well as the amino acid requirements of all monogastric species, and it appeared to be a good tool to evaluate the impact of refining the amino acids supply to be more suitable to the animal's needs.

[Feedinfo] How is it different from existing feed formulation tools?

[Angélique Cayzac] As mentioned above, NESTOR is a recommendation tool which combines the NE value of ingredients and NE requirements of the animals. It will help feed formulators, but it is not a formulation software. End-users are currently using various formulation software such as Allix, Format, Brill, etc., and they can easily import NESTOR's data into any of their existing software.

[Feedinfo] Give us some background for NESTOR. How long has it been in the works at Adisseo? What data are its values based on? What are your objectives for NESTOR?

[Pierre-André Geraert] Swine nutritionists are more aware of the benefits of NE and more and more end-users have begun to consider NE in their feed formulation. In poultry, recent publications and

conferences have further demonstrated the benefits of moving to NE in feed formulation to be more in line with animal needs. We thus decided to help the poultry community to move in that direction with the development of the tool. NESTOR will give all ingredient NE values for poultry and swine. Equations used in NESTOR have been published in peer-reviewed journals and the references are given. As you know, we have developed an important tool based on NIRS technology: PNE to evaluate batches of feedstuffs available in the database. ADICT, our nutritional value calculator, can transform analytical results into nutritional values ready to use in a formulation software. NESTOR will also allow end-users to connect with these tools to get a comprehensive knowledge of their feedstuffs.

We definitely want to help end-users to evaluate what is the potential of Net Energy in their feed formulation. Adisseo has no direct interest in promoting such a tool, but we realize that to help make this scientific progress accessible to the whole nutritionist community, we need to propose an easy tool to demonstrate the advantages and benefits of such a system in animal protein production. Lots of countries and scientists have developed equations to give the NE values of various feedstuffs but they do not realize that to help develop this scientific progress in the field, end-users need more than just this theoretical support: they also need something they can apply on a day-to-day basis. That is our objective.

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