



ORFFA



Orffa's investment in Allix3 feed formulation software to support its partners

Animal nutrition is an essential foundation for achieving optimal animal health and productivity. Many factors such as animal species, genetics and production goals are important to consider when adapting the feed to the needs of the animals. Feed formulation is the method to create a balanced diet, meeting the nutritional requirements of animals with the available feed raw materials in the needed amounts. Besides formulating an adequate feed for the performance of the animals, the diet should also be economically optimized for low feed costs. This highlights the importance of least-cost recipe formulation.

FEED FORMULATION PROCESS AND IMPORTANCE OF FEED ADDITIVES

In order to design an appropriate diet for good animal performance, animal health and profits, there are specific steps that should be considered:

1. **Defining the animal requirements:** In that regard, genetics, age and production objectives need to be determined. For instance, tables from genetic companies or published local standard requirements can be used as a starting point.
2. **Selecting the raw materials:** Availability, nutritional composition and prices are important characteristics for the possible inclusion of these ingredients. Minimum and maximum allowances are critical, for example to avoid negative effects on palatability.
3. **Formulating the feed:** Some manual or mathematical methods are available to meet the animal requirements the best way, with the provided raw materials. Feed formulation software programs are key tools to further optimize this, with a profitable adapted diet as final goal.

The raw materials that are typically considered are cereals, protein sources and fats and oils. Moreover, nutritional additives are also important to meet the animal requirements on a micronutrient level. Individual amino acids, vitamins and minerals need to be included, usually in the form of a premix, to avoid deficiency symptoms and suboptimal performance. Specific feed additives can also help creating the most beneficial diet for optimal animal health and immunity, such as probiotics, phytochemicals and mycotoxin binders. Finally, formulating with additives that support feed efficiency is critical to ensure high productivity, economic viability and sustainable production.

REFORMULATING WITH FEED EFFICIENCY ADDITIVES

Several dietary additives enable the reformulation of feed in order to improve feed efficiency or reduce feed costs, while maintaining precisely the nutrient requirements.

A first example of such additives is the application of betaine. Next to being a protective osmolyte, betaine plays a role in the methyl group metabolism in the liver. Choline as methyl donor has to be converted into betaine via a two-step oxidation reaction. This conversion reduces the efficiency of choline compared to betaine. Orffa recommends Excential Beta-Key as the most efficient methyl donor for the animals. When considering equimolar replacement (providing the same amount of methyl groups), 1000 g/ton of choline chloride 60% can be replaced by 700 g/ton of Excential Beta-Key. Because of the better bioefficacy, this dosage can be further reduced (e.g. to 385 g/ton in broilers). Furthermore, Excential Beta-Key can spare up to 10% of the total digestible methionine in broiler feed.

As second example, nutritional emulsifiers are also helpful feed additives to reduce the feed costs. Excential Energy Plus is able to improve fat, amino acids and fibre digestibility for enhanced energy efficiency. In return, dietary energy can be reduced by decreasing the level in fat sources, which are commonly the most expensive feed ingredients (Figure 1). In the latest meta-analysis, Excential Energy Plus has proven to reduce diet costs by 5.26 USD/ton while none of the performance parameters were significantly negatively impacted.

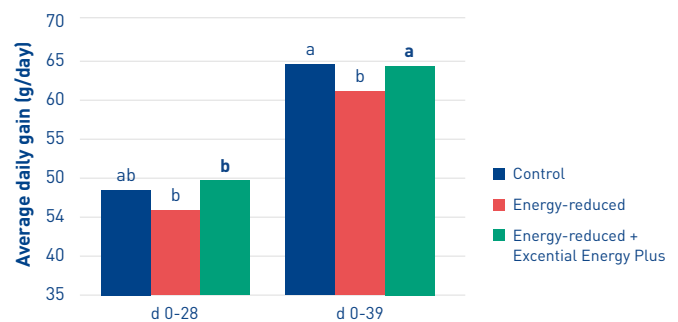


Figure 1: Example of a trial supplementing Excential Energy Plus while reducing the metabolizable energy by 100 kcal/kg of feed (Maertens et al., 2015).

Another advantage of feed formulation software is that it can also offer new advanced options, taking into account for example environmental constraints. This enables to minimise environmental impacts while still targeting minimal feed costs. Excential Energy Plus is an appropriate feed additive in such formula as its latest life-cycle assessment calculated a return on sustainable investment of 1:200.

ORFFA'S SUPPORT ON FEED FORMULATION

Orffa's vision is to be a partner for its customers, by helping reformulating diets and saving costs, with feed additives such as Excential Beta-Key and Excential Energy Plus. Since 2024, Orffa collaborates with A-Systems (www.a-systems.com), a company servicing more than 800 customers in more than 70 countries, by utilizing the feed formulation software Allix3. Orffa invests in feed formulation via Allix3 to provide appropriate matrix values and assist its partners worldwide in setting up feed formulations and applying feed additives in the most optimal way.

Feel free to reach out to your local Orffa contact when interested in this service.

Best health and performance achieved with optimized feed formulation

Supporting customers with additives reducing feed costs

Orffa's service with Allix3 feed formulation software

For more information please visit our website and contact one of our specialists (www.orffa.com)

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