



SUSTAINABLE CONTRIBUTION OF A NUTRITIONAL EMULSIFIER

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"The challenge for our industry is to secure the supply of high quality animal protein and a balanced diet to a continuously growing global population. Whilst minimizing the effect on natural resources, by optimizing land use and production efficacy and with an ever lower output in terms of pollution and ecological footprint."

Livestock farming is often seen as a major cause of pollution, producing a significant amount of greenhouse gasses, and for having an unreasonably high carbon footprint. It is therefore essential to find solutions to reduce the footprint of the industry. Orffa, a leading company in the development and formulation of novel feed additives, offers solutions which contribute to reaching that objective.

FEED SUSTAINABILITY CHARTER

The challenge for our industry is to secure the supply of high quality animal protein and a balanced diet to a continuously growing global population. Whilst minimizing the effect on natural resources, by optimizing land use and production efficacy and with an ever lower output in terms of pollution and ecological footprint. Historically, animal production industrialized in order to valorize by-products of human food production. It is common knowledge that a professionalized and large scale animal protein production, based on scientifically documented fundamentals, guarantees production efficiency, product quality and animal

welfare, hence minimizing the footprint of animal products and controlling the inherent pollution output.

The European compound feed industry, by means of its branch organization FEFAC, has issued a feed sustainability charter, highlighting five core ambitions that Orffa integrates in its sustainability policy. These ambitions are necessary to enable transition of agriculture as is foreseen by means of the European Green Deal and the global Paris Climate Agreement. Contributing to a climate neutral production through feed and developing sustainable solutions based on improved resource and nutrient efficiency are the first two ambitions listed in the FEFAC charter, for which a nutritional emulsifier can be instrumental.

COMMITTED TO A SUSTAINABLE, ENVIRONMENTAL FRIENDLY AGRICULTURE

Orffa's products and concepts can contribute to the reduction of greenhouse gasses, to a significant decrease of the ecological footprint of the industry, to more efficient animal production with less feed, and to a reduction of the nitrogen pollution by means

of more balanced protein nutrition. Orffa also offers solutions to reduce the use of antibiotics in feed and drinking water, and develops products which secure the safety and welfare of the animals as well as the safety of workers in the factory.

FIRST LCA OF A NUTRITIONAL EMULSIFIER DEMONSTRATES ITS CONTRIBUTION TO SUSTAINABILITY

The effect of Orffa's nutritional emulsifier (Excen-tial Energy Plus) on the environmental footprint of broiler production was measured on the basis of a series of scientific trials (University of Lavras, Brazil). Blonk Consultants, a leading firm in the application of LCA systematics related to agriculture, performed the assessment. LCA is a technique to evaluate the environmental impact associated with the life of a product or service from cradle to grave. Product Environmental Footprint (PEF) guidelines of the European Union were applied as methodology for the calculations.

The objective of this study was to assess the footprint of broilers fed energy-reduced diets with and without the nutritional emulsifier, in view of several environment impact categories: carbon footprint, eutrophication, acidification and land use.

The main results obtained were:

- The energy reductions applied (-40/-75 kcal/kg feed) resulted in feed cost savings between 3 to 6 USD/Ton. The application of the nutritional emulsifier resulted in similar performance compared to the standard diet (non-reduced) and a return on investment of 4:1 was obtained.

- In terms of total effect on the carbon footprint of broilers, the effect was significant. The use of the nutritional emulsifier allowed to reduce the carbon footprint of

broiler production with 0.12 kg of CO₂ eq./kg live weight (Figure 1).

- The application of the nutritional emulsifier in the broiler diet allowed to reduce acidification and eutrophication by 2.3 and 1.8%, respectively, and the land use with 1.9%. These positive effects are due to lower ammonia emissions and a shift in raw material composition of the diet.

- Applying this calculation in practice allows a broiler company, producing about 100 million broilers per year (weighing about 2 kg at slaughter), to reduce its carbon footprint in terms of broiler production with about 20,000 metric ton or 0.02 megaton of CO₂ eq. per year!

To put things into perspective, the Paris Climate Agreement as adopted in the Netherlands is scheduled to lead to a reduction in CO₂ eq., exclusively by animal husbandry, of 1.20 megaton per year by 2030. If all broilers produced in the Netherlands would be fed with a nutritional emulsifier, this would allow to account for about 10% of this objective (Figure 2).

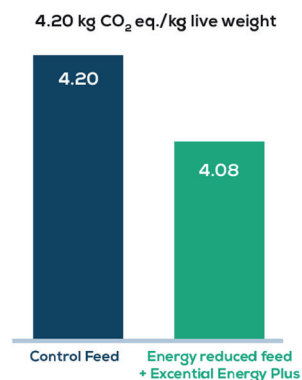


Figure 1: A sustainable nutritional emulsifier and its effect on CO₂ footprint in energy reduced diets

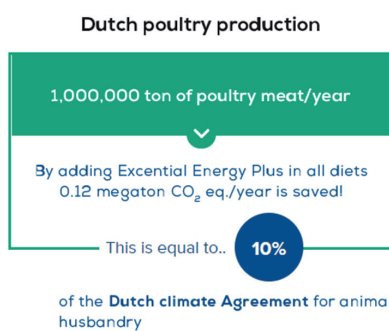


Figure 2: Improved emulsification contributes to climate action

TURNING SUSTAINABILITY INTO AN ECONOMIC BENEFIT

A nutritional emulsifier is specifically designed to be active in the gastro-intestinal tract and efficiently improve energy and nutrient digestibility. The additive enables feed formulators to reformulate and produce energy-reduced diets without impacting performance. This not only results in a more sustainable feed production, but also a more economically interesting one. Making animal production more sustainable does not necessarily mean an economic burden to feed producers and farm owners. Including a nutritional emulsifier in feed shows that there are gains on both sides.