



## > MODULE 3 | NUTRIENT EVALUATION SWINE

TUESDAY 6 JUNE

**Energy and amino acids are the two most expensive components in a swine diet. A good understanding of the nutritional needs of the animals is required to produce cost-efficient diets. Therefore, knowledge about nutrient evaluation systems is key.**

### Learning objective

- To obtain knowhow on energy and protein evaluation to improve nutrient utilization and therefore feed efficiency and carcass quality.
- To obtain knowhow on how to evaluate the different fibre ingredients and what nutrients can be used when formulating diets.
- To obtain knowhow on the beneficial properties of fat and fatty acids.
- To apply theoretical knowledge into feed formulas for different species and under different circumstances.

### Remarks:

- Please be aware that SFR recommendations will not be presented during the course.
- For more knowledge on nutritional strategies, it is recommended to (also) attend modules 4, 5 and 6 Applied Swine Nutrition.

### **Differences and use of AID and SID amino acids**

Amino acids are important in swine diet formulations, but different digestibility coefficients are used. What is the added value of diet optimization based on digestible amino acids and the ideal amino acid profile, as well as what are the effects of diet composition on protein digestibility and amino acid utilization?

### **Energy evaluation in swine nutrition**

Energy is an expensive component of a swine diet. Therefore, understanding the impact of energy and utilization in pigs is of interest to formulate diets that fulfil the requirements of the pigs. In this presentation, a theoretical overview of the net energy system in swine will be discussed as well as a practical implementation of this energy system. What is the added value of diet optimization based on net energy (NE)?

### **How to evaluate fibre in swine diets**

Fibre by-products are more and more available to be used in swine diets. Therefore, having an understanding of how to evaluate the different fibre ingredients and what nutrients can be used when formulating diets is very important. Based on SFR experience we have seen that fibre ingredients should be evaluated from a functional point of view and not (only) from an analytical point of view. Therefore, the objective of this presentation is to match fibre evaluation with the different physiological stages (piglets, growing pigs, gestation and lactating sows).

### **Facts about fat**

Fats and oils are a chemically diverse group of compounds. They have the highest average energy density among all macronutrients, but fats and oils are more than just an energy supplier in animal feed. Some fatty acids can be seen as functional nutrients. They differ in chemical composition and physical characteristics and therefore functionality. The beneficial effects of several fat components on swine performance and health will be discussed during this presentation.

### **Feed formulation**

Several feed formulations and nutritional concepts will be used to illustrate to apply theoretical knowledge to different feed compositions for different ages and under different circumstances. The focus will lie on optimising diets with different feedstuff tables (different energy formulas, SID versus crude protein).

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