

Importance of SFIS¹ as the link between feed and food efficiency on the farm

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Introduction:

The global consumption of animal protein is expected to grow during the next decades linked to population growth and urbanisation. Hence, it becomes more and more important to increase resource efficiency in livestock production systems. This encompasses different aspects, from the proper management of feed ingredients from crop field to feed mill or to livestock farm as well as improving animal performance. Specialty Feed Ingredients represent a large range of substances having specific functions in feed from technological aspects to zootechnical efficiencies.

As described in Dr Michael Binder's paper, the SFIS project has focused initially on the evaluation of nutritional management techniques for improving resource efficiency on farm by reducing nutrient excretion. However, as Specialty Feed Ingredients have more to offer, the SFIS project is proposing a long term strategic development of Product Category Rule for these products.

Abstract:

As described in Dr. Michael Binder's paper, the SFIS project has been initiated to evaluate the contribution of Specialty Feed Ingredients to mitigating the environmental impacts of livestock production. As a first step of the project, the SFIS project members agreed to evaluate the modification of the environmental footprint of chickens and pigs production due to addition of amino acids and phytase. As a result, initial Product Category Rules were defined for these products.

Additionally, the project team evaluated the potential of using different types of Specialty Feed Ingredients along the food chain, from crop production to livestock farm exit. In an analysis of the impacts of the different types of Specialty Feed Ingredients, shown at last Global Feed and Food Congress, the SFIS project members evaluated the potential further impacts of the Specialty Feed Ingredients. From this analysis, we could differentiate the impacts in different categories:

- Reducing waste and improving feed ingredients quality: Feed ingredients having technological functions, such as preservatives, antioxidants, silage additives, have the potential to reduce feed ingredients wastage from the crop field to the animal mouth. Hence, they increase the availability of feed ingredients in all livestock production systems where crops and by-products are used for animal production. As a consequence, the use of these technological additives allows a reduction of the emission intensity of most of the feed ingredients (i.e. environmental footprint per kg of feed ingredients). Furthermore, by preserving the nutritional quality of the feed ingredients and reducing its potential contamination (e.g. by mycotoxins), the use of these Specialty Feed Ingredients also has an impact on animal production, particularly in less intensified systems.
- Providing micronutrients essential for animal productivity and welfare: Some Specialty Feed Ingredients such as vitamins and trace elements are essential to ensure proper development of animals. These micronutrients are usually not present in sufficient amounts in feed ingredients, and particularly in crop by-products. They are therefore considered as limiting factors in animal production and, in the worst case, leading to nutritional deficiencies.
- Managing the nutrient excretion by improving use of nutrients: As demonstrated during the first phase of the SFIS project, amino acids and phytase reduce nutrient excretion by managing the protein content of feed or by improving the digestibility of plant phosphorus. Other Specialty Feed Ingredients present similar advantages, for

¹ SFIS: Specialty Feed Ingredients Sustainability Project

instance enzymes or probiotics that can improve digestibility of feed ingredients and, ultimately, animal performance.

- Improving animal performance: By reducing the Feed Conversion Rate in livestock production (i.e. improving feed efficiency), Specialty Feed Ingredients also mitigate the environmental footprint of livestock products very effectively.

Based on this, the SFIS project team considers it necessary to develop further the current Product Category Rules to encompass all types of animals (monogastric, ruminants and aquaculture), the different types of actions of Specialty Feed Ingredients and the different production systems. To accomplish the objective, a stepwise development strategy has been agreed upon to be run during the next years. The first step will be launched in the course of next month by validating the current Product Category Rules with Specialty Feed Ingredients having an effect on nutrient excretion.