POSITION PAPER

Brussels, 31 January 2020

The European Green Deal and the development of a Farm to Fork Strategy

Contribution of the Specialty Feed Ingredients Industry

FEFANA[1] is the united voice of the specialty feed ingredients[2] (SFIs) industry in the European Union. Specialty feed ingredients are key elements for optimized feed formulations. They enable more efficient and sustainable livestock production through reduced use of natural resources, less waste and livestock emissions, less reliance on antibiotics and high-quality animal products.

FEFANA welcomes the '**European Green Deal**' initiative and in particular the development of a **'Farm to Fork' strategy**.

This document outlines key contributions that FEFANA sees as relevant points to include in the 'Farm to Fork' Strategy. Details and specific examples are provided in the Annex.

Climate change Specialty feed ingredients contribute to reduce direct and indirect carbon footprint emissions from animal production.
Circular economy in the food and feed chain Specialty feed ingredients support the use of industrial co-products in animal nutrition by improving the digestibility of feed.
Global standard for sustainability Global Life Cycle Analysis methodologies have been developed in co-operation with the feed sector and they are applied to the entire food chain. They assess the environmental impact of animal farming and aquaculture and are essential for the evaluation of sustainability efforts.
Digitalisation on farms and along the feed and food chain Digitalisation is key for the further development of precision farming along the feed chain. It provides opportunities to use specialty feed ingredients as part of individual nutrition**.**
Organic Farming Without compromising the organic production principles, the use of specialty feed ingredients can further support organic farming by providing essential micronutrients to cover animals' needs in support of animal health and welfare.

[1] FEFANA membership comprises manufacturers and traders of feed additives, functional feed ingredients, premixes and other mixtures of specialty ingredients that enter the food chain via feed. FEFANA members are Small and Medium size Enterprises (SMEs) and large multinational companies. FEFANA facilitates the dialogue between EU institutions and feed business operators while promoting feed and food safety in a fair and competitive market.

[2] Specialty feed ingredients are feed ingredients (feed materials and feed additives) that are used in animal nutrition for achieving certain functions.

Improved animal health and welfare Specialty feed ingredients provide solutions to maintain the balance of the gut flora which is important to keep animal healthy and resilient to stressors such as undesirable microorganisms. They are also used to reduce the microbial contamination of feed and in animals.
Reducing the use of antibiotics in farmed animals Maintaining animals in optimal health and, thus, with higher resilience to stressors such as pathogenic micro-organisms, can prevent or limit the need for antibiotic treatments.
Sustainable seafood as a source of low-carbon food with innovative feed products Specialty feed ingredients improve the quality of food from aquaculture while further securing their safety. Indeed, innovative specialty feed ingredients contribute to the further development of the aquaculture sector as a source of low-carbon food and as a means to reduce negative impacts on oceans´ biodiversity.
Reduced environmental pollution Specialty feed ingredients enable feed producers to formulate their feed with lower nitrogen and phosphorus content. They boost the absorption of nutrients and influence manure composition and quantity leading to decreased excretion of nitrogen and phosphorus into the environment thereby helping to preserve ecosystems.
Improve resource efficiency The use of well-balanced feed, optimised with specialty feed ingredients, increases feed efficiency i.e. improved conversion of feed components in the animal.
Reducing wastes along the feed chain Specialty feed ingredients contribute to the reduction of losses along the chain by preserving feed, which otherwise would be subject to faster degradation and spoilage through natural processes/chemical reactions.

The 'Farm to Fork' Strategy can foster the role of SFIs in the feed chain and support the EU in becoming a global leader of the environmental and economic transition. The new strategy provides an opportunity to ensure a level playing field for the industry through a modern EU regulatory framework that provides for safe use of feed ingredients while incentivising innovation to the benefit of the ambitious targets of the 'European Green Deal'.

FEFANA welcomes the current evaluation of the *Regulation (EC) No 1831/2003 on additives for use in animal nutrition* as the basis for a revision of this regulation. We also support the recently started Commission initiative to assess the fitness of the EU legislative framework for new genomic techniques as a step towards exploiting the potential of modern biotechnology/fermentation technology to contribute to meeting the increasing demand for high-quality food, feed and bio-based goods while using fewer resources and producing less pollution and emissions.

FEFANA is ready to further engage with the European Commission in dedicated future actions in the context of the Green Deal/Farm to Fork strategy. Indeed, we would be pleased to support the European Commission in its efforts to establish a more coherent policy and regulatory framework, e.g. as a member of a stakeholder group guiding with the implementation of the 'Farm to Fork' Strategy.

ANNEX

The Contribution of the Specialty Feed Ingredients industry to the Objectives of the Green Deal - detailed reflections

Climate change

CHALLENGE

In addition to feed, which is the main contributor to livestock's greenhouse gas emissions; manure management and enteric fermentation are also sources of greenhouse gases emission (methane and ammonia). The emission from manure is linked to the manure management system, the composition and the physical characteristics (e.g. pH) of the excreta.

SOLUTION

The use of specialty feed ingredients enables to reduce the need for of protein-rich feed ingredients, often associated with a higher carbon footprint. It also allows (as described above) the management of the manure composition, hence reducing the concentration of nitrogen and other nutrients leading to the emission of ammonia and methane. Furthermore, acidification of urine through the feed composition and the use of specific specialty feed ingredients, reduces the emission of ammonia during manure management. Some of these uses are recognised as Best Available Techniques in the context of farming pigs and poultry.

Enteric fermentation can be modulated by the daily ration composition (diets containing more concentrate are leading to less methane emission) or using specialty feed ingredients, acting directly or indirectly on enteric methane emission. Specialty feed ingredients are currently evaluated by the European Food Safety Authority for this purpose.

RESULT
Specialty feed ingredients contribute to reduce direct or indirect carbon footprint emissions from animal production.

Circular economy in the food and feed chain

CHALLENGE

The recent development of certain industries (e.g. biofuels) has led to the availability of co-products, of which some can be used in animal nutrition. However, many co-products possess a lower nutritional value compared to animals' requirements and may even contain a relatively high concentration of antinutritional factors.

SOLUTION

Speciality feed ingredients have been developed for improving the nutritional value of co-products, by reducing the impact of antinutritional factors (e.g. phytic acid) and providing support to the enzymatic degradation of nutrients in the gastrointestinal tract (e.g. enzymes, phytogenic substances). The reduction of antinutritional factors and the increased ability of making available nutrients in the gastrointestinal tract result in maintaining the same performance, while using less plant-based commodities.

RESULT
Specialty feed ingredients support the use of industrial co-products in animal nutrition by improving the digestibility of feed.

Global standard for sustainability

CHALLENGE

The feed industry (including the Specialty Feed Ingredients industry) has supported the development of methodologies, aiming at assessing the environmental impacts of livestock production. Life Cycle Analysis methodologies are a key element for sustainable development in terms of allowing the comparison of systems and the evaluation of progress towards low emissions and, ultimately, a climate neutral economy.

SOLUTION

FEFANA has been involved in different initiatives during the last decade for developing global Life Cycle Analysis methodologies, including impact of animal farming and aquaculture on biodiversity, in the context of:

- The Livestock Environmental Assessment and Performance partnership supported by the Food and Agriculture Organization of the United Nations (FAO): a specific guidance document for the evaluation of the benefits of feed additives is currently being finalised: http://www.fao.org/partnerships/leap/news-and-events/news/detail/en/c/1206605/
- The Specialty Feed Ingredients Sustainability project, an industry lead project, validated by independent scientific experts: a publication in a peer reviewed journal demonstrates the importance of phytase and amino acids on the reduction of the carbon footprint of feed and animal production in three pilot regions of the world (Europe, North America and South America): https://ifif.org/our-work/project/the-speciality-feed-ingredients-sustainability-project-sfis/
- The Product Environmental Footprint approach from the European Commission: the development of Product Category Rules for feed, including the use of specialty feed ingredients, allows the availability of information relative to the environmental footprint of feed and its use in the food chain: https://ec.europa.eu/environment/eussd/smgp/ef_pilots.htm
- The Global Feed Lifecycle Institute, an industry lead project aiming at providing harmonised data for the evaluation of environmental footprint globally: http://globalfeedlca.org/

RESULT
Global Life Cycle Analysis methodologies have been developed in co-operation with the feed sector and they are applied to the entire food chain. They assess the environmental impact of animal farming and aquaculture and are essential for the evaluation of sustainability efforts.

Digitalisation

CHALLENGE

The digitalisation of agriculture has advanced rapidly in most recent years. Yet, there is still potential to obtain greater advantage in terms of improving the sustainability and competitiveness of the EU

agricultural sector and of simplifying the daily work of farmers. The EU has recognised this as an important objective with regard to the future common agricultural policy (CAP).

SOLUTION

The development of digitalisation on farms and along the feed and food chain, provides further opportunities for the use of specialty feed ingredients, in the context of precision feeding and individual nutrition (especially for reproductive animals). The development of tools and sensors for the evaluation of the animal's conditions, will lead to the development of specialty products distributed by other means than feed (e.g. nutritional supplements). The use of blockchain approaches can further improve the traceability of specialty feed ingredients and promote their benefits along the chain.

RESULT
Digitalisation is key for the further development of precision farming along the feed chain. It provides opportunities to use specialty feed ingredients as part of individual nutrition**.**

Organic Farming

CHALLENGE

Organic farming, including aquaculture, is also using specialty feed ingredients, under certain conditions, e.g. they need to be authorised for the use in organic production and must not be produced using modern biotechnology (no genetic modification).

These conditions limit the access of organic producers to beneficial specialty feed ingredients, or in other words, deprive them from the taking advantage of the benefits that specialty feed ingredients provide to conventional production systems. For instance, vitamins are necessary for the metabolism of animals, regardless of the way they have been produced.

SOLUTION

The Specialty Feed Ingredient industry has developed efficient manufacturing processes, based on the use of genetically-modified microorganisms under contained conditions, in several cases replacing energy and waste-intense chemical synthesis by fermentation. As the use of specialty feed ingredients (e.g. vitamins and amino acids) produced with genetically modified microorganisms is not allowed in organic production, organic producers do not have access to these sources and might face challenges in the prevention of deficiencies/growth reduction and animal health/welfare issues.

Without compromising the organic production principles (link to the soil, circular economy, lower performance), it might be appropriate to envisage a larger use of specialty feed ingredients to improve, e.g. resource efficiency (properly using digestibility enhancers), limiting gut microbiome dysbiosis (by limiting excess nutrients, such as proteins) and other aspects.

RESULT
Without compromising the organic production principles, the use of specialty feed ingredients can further support organic farming, by providing essential micronutrients to cover animals' needs in support of animal health and welfare.

Improved animal health and welfare

CHALLENGE

Animal health and welfare are highly dependent on the housing, management practices on the farm and nutrition. Nutrition, furthermore, serves to improve resilience of animals to stressors (including microbiological stressors).

The gastro-intestinal tract of the animal can be a point of entrance of undesirable substances and microorganisms from the environment. The microbiome present in the gastro-intestinal tract of healthy animals works in symbiosis with the host animal. However, the microbiome balance can be endangered by different factors, leading to dysbiosis, such as:

- Presence of undesirable microorganisms;
- Excess of certain nutrients (e.g. protein excess);
- Modification of the physico-chemical characteristics of the gut content (e.g. increased viscosity or modified pH).

In case of dysbiosis, the digestion of feed ingredients is altered, and the protective function of the gastro-intestinal epithelium can be negatively affected.

SOLUTION

Dysbiosis can be controlled by:

- Limiting the presence of undesirable microorganisms in the gastro-intestinal tract, through competitive exclusion (using gut flora stabilisers), the use of hygiene conditions enhancers and improving feed quality (e.g. limiting moulds development);
- Avoiding excess of certain nutrients, through decreased protein levels in feed and improving protein sources digestibility in the digestive tract;
- Stabilising the physico-chemical characteristics of the gut content, through the use of acidity regulators or digestibility enhancers, limiting the capacity of fibres to increase viscosity of the gut content.

From an animal production perspective, three qualitative objectives are of topical importance:

- Safe food, with the reduction of contamination with zoonotic agents of food of animal origin;
- Sustainable food, with the reduction of food wastes linked to the organoleptic features of food of animal origin;
- Nutritious food providing, in particular, micronutrients and essential fatty acids.

A symbiotic environment in the gut enables and ensures a reduction of the inflammation risk of the gastrointestinal wall, a key element for the digestive capacity of animals.

Regulation (EC) 1831/2003 on additives for use in animal nutrition includes a specific functional group: *hygiene conditions enhancers*, that enables innovation in the field of safe food production. This functional group is defined as ‘substances or, when applicable, microorganisms which favourably affect the hygienic characteristics of feed by reducing a specific microbiological contamination’.

The Specialty Feed Ingredients industry has taken the opportunity of the introduction of this functional group to develop innovative solutions to further improve the hygienic quality of food of animal origin, particularly with regards to Salmonella and Campylobacter contaminations.

RESULTS
Specialty feed ingredients provide solutions to maintain the balance of the gut flora which is important to keep animal healthy and resilient to stressors such as undesirable microorganisms. They are also used to reduce the microbial contamination of feed and in animals.

Reducing the use of antibiotics in farmed animals

CHALLENGE
The non-prudent use of antibiotics in animal farming may lead to the development of antimicrobial resistance spreading from animals also to humans.

SOLUTION

Nutrition has a crucial function in animal performance as well as in the maintenance of optimal animal health and welfare status. Specialty feed ingredients used in feed and pet foods are pivotal contributors to ensuring adequate nutrition and/or optimal animal welfare including support of animals' defenses against, for example, biological stressors. Maintaining animals in optimal health and, thus, with higher resilience to stressors, such as pathogenic micro-organisms, can prevent or limit the need for veterinary treatments. FEFANA has documented some of the different benefits of specialty feed ingredients in maintaining animals' optimal welfare and health in a publicly available factsheet : http://fefana.org/wp-content/uploads/2019/04/2018-03-26-AMR-Factsheet_FINAL.pdf

RESULT
Specialty feed ingredients maintain animals in optimal health and, thus, with higher resilience to stressors such as pathogenic micro-organisms, preventing or limiting the need for antibiotic treatments.

Sustainable seafood as a source of low-carbon food with innovative feed products

CHALLENGE

The use of fish meal and fish oil in feed for livestock and aquaculture is currently based on two main sources: 1. by-products of the fishing and culture of fish for human consumption and 2. catches for producing fish meal and fish oil. The production of fish meal and fish oil has been linked, in certain occasions, with overfishing.

In addition, unfortunately fish meal and fish oil are sometimes sources of undesirable substances in feed (such as dioxins, PCBs and heavy metals).

SOLUTION

During the last years, a significant reduction of fish meal and fish oil used for the production of aquaculture feed has been achieved. Maritime feed ingredients have largely been replaced by plant-based feed ingredients. This shift was possible only thanks to the addition of specialty feed ingredients, such as digestibility enhancers and amino acids. In addition to the impact on overfishing, this has also led to a reduction of undesirable substances in feed and thus in food, hence improving food safety. It should be noted that due to the peculiar composition of some fish oil regarding Omega-3 fatty acids (EPA and DHA), the increased reliance on plant-based feed ingredients could have a long-term impact on the concentration of important fatty acids in certain fish for human nutrition.

The Specialty Feed Ingredient industry has innovated in renewable, safe and nutritious source of Omega-3 fatty acids, through the production of microalgae. Using fatty acids from microalgae can contribute to lower the reliance of aquaculture feed on fish oil, to reducing the level of undesirable substances in feed and improving the quality of fish flesh.

RESULT
Specialty feed ingredients improve the quality of food from aquaculture while further securing its safety. Indeed, innovative specialty feed ingredients contribute to the further development of the aquaculture sector as a source of low-carbon food and as a mean to reduce negative impacts on the oceans´ biodiversity.

Reduced environmental pollution

CHALLENGE

Environmental pollution from animal production is mainly related to the manure, excreta produced by animals on the farms. It is usually connected to the overuse of nitrogen and phosphorus on soils, linked to leakages and consequential eutrophication of watercourse, lakes and sea. On the other hand, nitrogen and phosphorus present in manure are very good sources of nutrients for plants and crops, when used in accordance with the plants/crops' requirements.

SOLUTION

The composition and quantity of animal manure depends on animal management and nutrition. It is possible to manage the manure composition through nutrition, e.g. by reducing the nitrogen and phosphorus concentration in the diets, using for example enzymes, amino acids, highly digestible sources of phosphates. Proper management of animal manure can also lead to a reduction of use of fertilisers produced from fossil resources.

RESULT
Specialty feed ingredients enable feed producers to formulate their feed with lower nitrogen and phosphorus content. They boost the absorption of nutrients and influence manure composition and quantity, leading to decreased excretion of nitrogen and phosphorus into the environment, thereby helping to preserve ecosystems.

Improve resource efficiency

CHALLENGE

The most important source of environmental emission in animal production is feed and nutrition, accounting for about 60 to 75 % of the environmental footprint. It is therefore a must to improve feed efficiency in animal farming. This depends on:

- The adaptation of the provision of nutrients according to the requirements of animals at different stage of their lifetime;
- The digestibility of the nutrient's sources (feed ingredients) used in the composition of the feed;
- The targeted use of the nutrients for growth, milk, egg, wool production by the animals (i.e. reducing the use of nutrients for responding to stress);
- The production of animal sourced products (i.e. reducing mortality and morbidity on farms).

SOLUTION

The Speciality Feed Ingredients industry has developed different approaches to optimise feed efficiency:

- Provision of specific micronutrients fitting the requirements of animals at different production stages to increase productivity, e.g. by providing nutritional additives (vitamins, trace elements and amino acids);
- Improving digestibility of the nutrient sources and thus reducing the amount of manure, through degradation of antinutritional factors, modulation of the gastro-intestinal microbiome and improved source of micronutrients, e.g. by providing digestibility enhancers, gut flora modulators or chelates of trace elements;
- Improving the animals' resilience to stressors, by supporting the gastro-intestinal function, by degradation of inflammatory compounds produced during the digestion process, and by optimising the biological antioxidants pool (necessary for innate immunity), e.g. providing gut flora modulators, biological antioxidants (polyphenols, vitamins, trace elements, carotenoids);
- Reducing mortality and morbidity of animals, by improving their resilience to stressors by limiting the excess of nutrients, such as nitrogenous compounds and by reducing the impact of antinutritional factors, e.g. by providing amino acids, digestibility enhancers, mycotoxins binders and inactivators.

RESULT
The use of well-balanced feed, optimised with specialty feed ingredients, increases feed efficiency i.e. improved conversion of feed components in the animal.

Reducing wastes along the feed chain

CHALLENGE

Feed ingredients and feed are composed mainly of organic matters, which are by nature sensitive to oxidation, development of moulds and bacteria and potentially to aggregation. The storage of these products may lead to degradation, loss and spoilage rendering feed unsafe or unsuitable for animal nutrition.

SOLUTION

The preservation of the nutritional quality of feed ingredients and feed, for instance by using antioxidants, preservatives, silage agents and anticaking agents, has become an important element of sustainable animal production.

RESULT
Specialty feed ingredients contribute to the reduction of losses along the chain by preserving feed, which otherwise would be subject to faster degradation and spoilage through natural processes/chemical reactions.