

Zootechnical Registration: Proven efficacy vs believed benefits

Abstract

Phytogenics substances are increasingly accepted by the feed industry to improve animal performance. However, there is still a lack of knowledge and experience about their modes of action and the optimal way to apply them in commercial feeds, therefore phytogenics might be looked at with a certain skepticism. Due to the increasing number of phytogenic products that are offered on the market, it is getting more and more difficult to reliably differentiate 'marketing products' from effective substances optimizing livestock production. Indeed, it is not possible for nutritionists to evaluate all phytogenic products that are currently available. Therefore, Delacon decided to apply for a registration of Biostrong® 510 as a zootechnical feed additive and digestibility enhancer for poultry.

The European Union worked out a sophisticated and independent process to proof the feed additives' safety for target animals, consumers and the environment: Within this process, there is the possibility to register a product in various categories depending on their functions and properties. This categorization enables to differentiate for instance between a technological additive, affecting the characteristics of feed, or zootechnical feed additives, affecting animal performance or welfare. A chair of 21 independent scientists with expertise across different academic disciplines evaluate the safety and efficacy of the additive per stated claims. This official procedure guarantees that only those products are granted the status as a "zootechnical feed additive", which verifiable affect the performance of target animals.

Introduction

Feeding the world population is an important objective due to the continuously growing number of people. In addition, their demand for animal protein increases, which is related to the increasing annual family income in countries with emerging economies. Addressing this challenge, animal production transformed in time from a basic need to a significant economic sector (the value of global livestock production in 2013 was estimated at about 900 billion dollars). Hence, several strategies were applied to enhance the efficiency of animal production, which are for example the selection of animals for increased growth rate and feed efficiency. But moreover, the development of high quality feeds, which are adapted to the particular nutritional requirements of the animal at different ages, and of feed additives, which stimulate nutrient utilization, are crucial to improve the profitability of modern animal production, while minimizing environmental impact.

However, by focusing on the short-term benefits of fast growing, highly productive livestock, long-term consequences on human and animal health in view of using antimicrobial growth promoters (AGPs) have been neglected. The ban on AGPs, which was effectuated in Europe already a decade ago, slowly started to change the way of thinking on a global scale, but this situation is changing rapidly now. Many new feed additives, pre-mixtures and feed supplements are introduced to the market promising a more efficient and safe animal production.

Both, producers and consumers of animal products, do benefit from an independent evaluation process of feed additives to prove both the efficiency and the safety of these new products – safety for the consumer, the workers, the environment and of course the animals.

From losing the overview on feed additives ...

The use of AGPs in sub-therapeutic quantities was a very effective method for optimizing economic efficiency due to their positive effects on animal production performance for over 60 years. However, its effects on animal performance decreased over time due to improved animal housing and management, biosecurity and feed quality since the AGPs were introduced. In general, the higher the intestinal health status of the animals, the less nutrients are needed for immunological processes, the higher their growth rate and performance. Besides improved animal management, another successful approach to enhance efficiency of livestock production is to influence directly the physiology of the target animals using specific feed additives. Since the last three decades, the use of phytogenic feed additives (PFA) and pre-mixtures thereof, whose active substances are derived from plants only, are increasingly accepted by animal producers, and are used as alternative or in combination with AGPs. Although the modes of action of AGPs were never clarified in detail, their advantages to promote growth and feed efficiency of livestock was well-known, despite the decreasing effects over time. Ironically, PFA suffer the opposite fate: although their different modes of action are well described, their positive impact on animal performance often was questioned. However, despite this initial skepticism an increasing number of independent studies clearly show the beneficial impact of PFA for livestock production. On the one hand, they directly influence animals' health and immune status, by showing anti-oxidative effects, by increasing animals' feed and nutrient intake or by stimulating secretion of digestive enzymes; consequently, PFAs promote daily weight gain of the target animals. On the other hand, PFAs are known to have positive influence on the environment by decreasing emissions of ammonia, methane and other greenhouse gases. Thus, it is not surprising that PFAs play an increasingly important role in animal production, while the use of AGPs is pushed back by law and customer pressure for health reasons.

Producers in animal industry are offered a growing set of more or less potent products, all of them promising to enhance animal performance. It is almost impossible to keep the overview and, logically, the question arising is **“How to reliably differentiate ‘marketing products’ from safe and effective substances optimizing livestock production?”**

... to finding the certified efficacy

Indeed, as far as phytogetic pre-mixtures and feed supplements are concerned, there exists at least one practical solution to answer the aforementioned question: the official registration as a 'zootechnical additive' gives proof of a product's efficacy. Obtaining a registration as a 'zootechnical feed additive' represents the Scientific Gold Standard and is evidence for physiological benefits in animal performance.

In the European Union, phytogetic products can be used in feed as premixtures of feed additives or feed supplements, as long as the ingredients are listed in the Community Register of Feed Additives (according to (European Commission (EC)) No 1831/2003) as flavouring compounds or as feed materials (according to (EC) No 68/2013). Those phytogetic products do not require an additional registration, but do not allow claiming any effect on zootechnical performance. An authorization as 'zootechnical additive', precedent to officially claim any effect on animals' performance, requires evidence of the claim and an application request to the EC. A dossier must be filed, demonstrating the zootechnical efficacy of the additive, as well as its safety for target animals, consumer, worker and the environment. The EC is consulting the European Food Safety Authority (EFSA), an independent scientific body of the European Union, to assess the documents to determine whether the additive complies with the requirements of a zootechnical feed additive. EFSA provides their scientific opinion to the EC, to support the decision of the Commission and the Standing Committee on an authorization. The authorization is valid for a period of ten years, after which a renewal procedure is mandatory.

Added value. In the European Union, all phytogetic feed additives, as well as pre-mixtures and feed supplements comprised of ingredients that are mentioned in the Catalogue of Feed Materials or feed additives, must pass the authorization process as feed additive, if efficacy claims are used. The requirements concerning safety issues are mandatory, whereas the scope of application differs, and is reflected by the additive categories. The difference is related to the mode of influence on animals' physiology and thus gives proof on the performance of the product. Although the whole process is costly and time consuming, both the producers and consumers of animal products benefit from the described science based process. The production of healthy food is the superior target of the EU Food legislation. Their horizontal approach implies the whole food chain, including feed additives for livestock production. Although different regions use comparable system to authorize feed additives, the registration process of the EU is an international standard that is recognized worldwide.

It is the official registration process with its additive categories, which allows to distinguish between products modifying the sensory components of the feed and products with a holder-specific zootechnical registration proven to enhance directly the animals' performance.

Concluding remarks

Against initial skepticism towards phyto-genics, this category of zootechnical feed additives has been proven to provide reliable and safe solutions to enhance animal performance and improve the profitability of animal production. The increasing consumers' opinion against the use of antibiotic growth promoters has strongly pushed the developments of all kinds of feed additives, some with and others without clear proven modes of action. Keeping the overview of this product diversity is almost impossible for individual producers. The independent registration process for feed additives in the European Union not only gives proof of the products' safety: A zootechnical registration guarantees the effectiveness of phyto-genic products and will be granted exclusively to products with significant beneficial effects on animals' performance.

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