

FeedInfo 20th Anniversary Series: QUESTIONS FOR THE FUTURE OF PHYTOGENIC FEED ADDITIVES

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According to a recent report from MarketsandMarkets, the global feed phytogenic feed additives market is projected to reach nearly USD 1 billion by 2023, with a CAGR of 8.8%. What is your company's view of market growth? What about your projections for 2040?

An estimation of a CAGR of nearly 9% by 2023 seems very realistic for this type of feed additive to me. Phytogenics remains one of the core feed additive types that are accepted for their potential to support animal health and performance. As such, they benefit from the trend to invest in the animal's gut health, thereby helping to restrict the farmer's dependency on antibiotics as much as possible.

While a profound sales growth is expected to continue in the next decades, predicting trends beyond 2030 is more difficult. Nowadays, many feed additive types are used for similar purposes, resulting in comparable growth numbers for different product types. I believe that in the future, feed additive manufacturers and animal producers will learn more about the precise benefits and restrictions of different feed supplements, which will result in a more detailed positioning and optimized use of these products. Rather than just supplementing feed with a gut health supporting additive with the general aim to improve performance of animals, I believe that animal producers will rely on a selection of a restricted number of well-studied additives that will be applied, alone or in combination, during specific production stages or different conditions.

In other words, animal producers will be able to take more advantage of the complementarity of different additive types. Predicting how this will affect the growth rate of phytogenics on the long-term, as compared to other additive types, is difficult, as it depends on knowledge and experience that is currently still being built up.



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 Arguably, compared to other feed additive categories, the end-consumer can relate more to phytogenics due to the common use of herbs and spices, as well as "Grandma's home remedies" in everyday life, and how these are associated with "wellness". How much of a competitive advantage does this actually represent for you?

From the consumer's perspective, I don't think the specific advantage of animals raised on feed supplemented with phytogenics, rather than other types of gut health additives, should be overestimated: with the exception perhaps of phytogenics that can be used in organic production, the value of the 'natural' origin of feed supplements designed to support livestock production, isn't easily transferred from feed (additive) suppliers to the end-consumers.

The latter group rightfully demands qualitative, affordable and safe food that is produced in a sustainable way. As such, they require for high standards in animal health and welfare. But meeting these requirements in practice, is more of a concern for farmers than it is for consumers; producers should be able to understand how phytogenics can help them to raise animals as healthy as possible.

 What is your view on market penetration of phytogenic feed additives in global markets? Are there striking regional differences? Are some approaching maturity or are we still far off from that scenario?

There are for sure regional differences in the use and perception of phytogenics. In several areas in Asia-Pacific, for instance, the use of phytogenics is very well accepted. However, I believe variation in perception and acceptance among customers in one country, is often bigger than the variation among different countries.

This has to do with the fact that for certain people, the positive image they have of phytogenics is related to the intuitively attractive idea that nature is a rich source of beneficial bio-active ingredients and that positive consequences of ingestion of certain herbal components on the digestive tract of animals, are the result of long co-evolutionary process that has sculpted their efficacy.

But for others, the concept of 'natural' solutions is too vague and by no means a guarantee for their effectiveness. Especially for these people, open communication on the practical advantages and limitations of different phytogenic mixtures will be critical to discuss with them whether they want to consider trying out phytogenics.

All in all, this underlines that we have to recognize that "phytogenics" are a group of products with a wide range of active ingredients and possible applications, rather than it being a narrowly defined product type with a specific mode of action. As a consequence, this means that there is still considerable room to investigate the best applications for different phytochemicals, and subsequently, to educate livestock producers on the outcome of these studies. This means that maturity of the market is not for the near future, in my opinion.



 **A big challenge for the feed phytogenics market can be that education regarding their application with respect to their benefits and dosage levels is not so widespread, resulting in a low adoption rates. How big of an issue is this for your company when it comes to developing markets still pretty much reliant on antibiotic growth promoters?**

This is for sure an important issue. Due to the fact that, as outlined above, phytogenics entail such diverse compounds, it is understandable that lesser informed livestock producers feel uncomfortable with what to expect from botanical-derived products; they look at these products with great skepticism, especially if they are used to rely on AGP's.

Sound research will be critical to convince them to give phytogenics a place in their feeding programs. However, I'm convinced that in doing so, it will be of paramount importance for producers of phytogenics not to fall into the trap of focusing only on academic research at the cell biology or microbiology level to explain putative working mechanisms of selected phytochemicals, in order to try to explain effects seen in the field. It will be at least as important to investigate, together with animal producers, what the practical consequences of these findings are on the farm. Companies who will fail to do so, risk to only show how smart they are, rather than to be able to offer customer-centric solutions.

 **Many sources of phytogenics – especially essential oils – are sensitive substances that can lose their efficacy and efficiency after exposure to environmental factors. The emergence of new technologies such as encapsulation can extend the shelf life of phytogenics. In your opinion, to thrive in the phytogenics business does a company necessarily need to be involved with encapsulation in some form or another?**

It for sure will be important to investigate how to stabilize active substances. Coating or other form of protection might be needed in that context. But equally important is to evaluate what the consequences are of protection in terms of delivery of bio-active components in different parts of the gastro-intestinal tract. It might be that well-protected products release substances more distally in the digestive system, where they might have a bigger impact. But it can be equally argued that some components are most effective in the stomach, or should ideally be absorbed quickly, in which case overprotection could have adverse effects. Encapsulation or other forms of protective shouldn't be a marketing tool or a goal in itself, but should serve to maximize the potential of the active ingredients.

 **Can we expect further phytogenic feed additive market consolidation in the coming years? And/or will we see the emergence of more external partnerships?**

Further consolidation and expansion of partnerships is to be expected in the phytogenics market, but also for other feed additives, for that matter. It is becoming ever more clear that several feed additive products show great promise in addressing specific aspects of supporting gut health and animal performance, rather than that one 'super-additive' is or will be developed that will push other product types from the market. That is why, as feed additive producers, it will become increasingly important to be able to offer flexible programs and services depending on customer needs.

Therefore, at least some companies will search for horizontal consolidation, to increase market share, but also to expand the range of solutions they can offer.

At the same time, vertical consolidation will continue, as for example big feed producers and integrators want to develop their specific concepts, in which phytogenics are likely to find a place.



 **Are you concerned by an eventual commoditization of the phytogenic feed additive market?
Do you see this happening in the future?**

Commoditization is much more likely to happen for products with a relatively simple composition, and clear mode of action. Acidifiers may be one such example. However, given that the group of phytogenic products is so diverse, I don't expect that a simplification in terms of selection of active ingredients and targeted modes of action, is likely to happen soon. As mentioned above, this situation comes with specific challenges, both for additive manufacturers as for animal producers. Addressing these challenges and opportunities will counteract commoditization in the near future.

 **The phytogenic feed additive industry is characterised by a wide variety of potential ingredients with numerous modes of action. Which factors are most likely to shape the phytogenic feed additive category in the next 20 years?**

The development of phytogenics will depend on how feed additive producers will be successful not only in increasing our understanding about phytochemicals, but also transforming this knowledge into practical solutions for livestock producers.

In the early days of phytogenics, beneficial effects of supplementing animals with phytogenics were explained by loosely referring to potential modes of actions that were described in *in vitro* studies. Later on, more in-depth studies were set up to evaluate certain aspects of phytogenics, such as their effect on digestion.

I believe it is important that we now move on towards exploring the optimal use of phytogenics in different production contexts, to be able to fully capitalize on the potential of phytogenics as part of a comprehensive health-based strategy to raise livestock animals.