

The future of additives based on plant extracts

By Elisa Arnaud and Jennifer Maurin, Pancosma SA

In a European regulatory context for the re-evaluation of plant extracts, the future of these innovative solutions has potentially been compromised. Although FEFANA's (European Association of Specialty Feed Ingredients and their Mixture) Consortium FFAC (Feed Flavouring Authorization Consortium) still supports 190 raw materials, 70 of them have recently been banned.

According to AFCA CIAL (The Supplements Manufacturers Association for Animal Feed), the main reason they have been banned is the complexity of documents required to be provided in order to obtain an authorization on the market. Indeed, the wide diversity of plant extracts (extraction method, variability in solvents, etc.) and their compounds (breed, origin, etc.) lead to technical difficulties defining them from an analytical point of view. And of course, the costs to run these studies are relatively high. Banning these raw materials will lead to their removal from the market and will further restrict the list of molecules available for formulation. Actives companies and members of the FFAC continue to fight to ensure a future for this category of promising raw materials. Final products using these natural raw materials are mostly recognized in Europe as 'sensory additives' with aromatic properties for feed. This regulatory category does not allow claims to be made relating to performance improvement (body weight gain or feed efficiency). Claims relating to disease prevention or treatment are restricted to veterinary products. This framework strictly limits communications from manufacturers and undermines the efficacy of these products, even though many are recognized in human nutrition.

Plant extracts are riding high!

Products inspired from natural substances seem to fit perfectly with the current needs of the industry. Indeed, current challenges for animal feeding related to feed demedicalisation offer great possibilities for

the application of botanical extracts. After significant efforts from the community to reduce the use of colistin, zinc oxide and amoxicillin, coccidiostats are now being targeted. No one can ignore the beneficial effects of plant extracts as a replacement for these molecules, not by destroying infectious agents, but by helping animals to better cope with them. Numerous publications demonstrate the ability of some extracts to reduce inflammation generated by the infectious agent (e.g. capsaicinoids derived from capsicum oleoresin from red chili peppers) or to potentiate the response of the acquired immune system (e.g. curcuminoids only present in turmeric oleoresin).

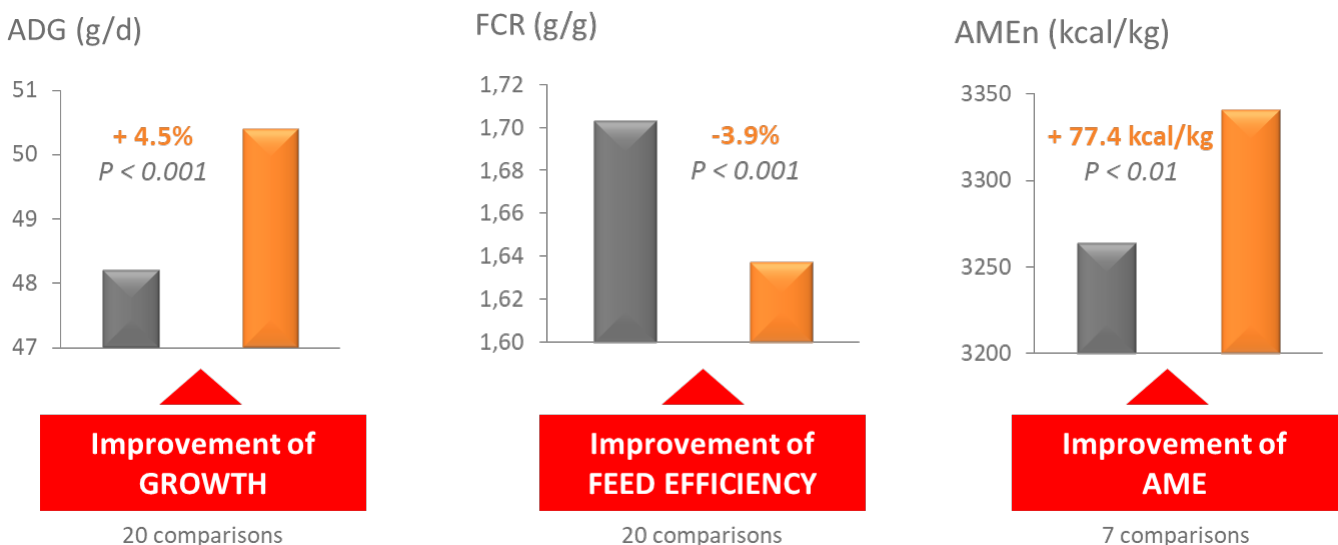
Which strategy should be employed to promote the potential of plant extracts based products?

In Europe, additives are generally classified in 5 categories defining the extent of their effects. According to the European regulation (reg 1831/2003 CE) the majority of products based on plant extracts are only authorized as "sensory additives". In order to prove the real zootechnical efficacy of their product, suppliers have the possibility of submitting an authorization dossier to have it upgraded to a zootechnical additive by the European Commission (EC).

The EC mandates the EFSA (European Food Safety Authority) to initiate a full evaluation of the additive in order to obtain an assessment from the latter. Based on this assessment, the European Commission will be able to reclassify the product as a "zootechnical additive" category". This assessment allows the company to communicate about performance aspects.

In this context, in 2015, Pancosma, a Swiss company located in Geneva, introduced the first zootechnical additive for broilers based on natural active ingredients to the European market. This project, initiated in 2013 in collaboration with EFSA, unified and mobilized the company's

Figure 1: Meta-analysis presenting the effects of a supplementation with XTRACT® at a dose of 100 g/t of feed on broiler performance



skills and labour for one singular goal: to meet the requirements of the EFSA's specialists. The dossier included information about the raw materials (manufacturing, purity, safety, etc.), the traceability of active ingredients (transparent formula) in the pure product or in final feed, the manufacturing process and quality control. Then, the assessment addressed performance effects. Following the reception of a positive opinion in February 2015, a publication in the official journal legalized the new status of the product in September 2015.

A mode of action identified and an efficacy scientifically demonstrated

Over the years, XTRACT® Evolution-B was tested in one hundred commercial farms and universities across the world. These trials proved the reliability of the zootechnical performance results on broilers. Several external reports were submitted to EFSA for assessment during the registration process. The committee provided statistical models and guidelines to realize data analyses.

Trials submitted to EFSA's committee presented clear performance improvements in broilers receiving XTRACT®. Broilers receiving a feed supplemented with XTRACT® at a dose of 100 g/t showed a better final body weight and feed conversion ratio. In addition, all existing results were gathered in a meta-analysis published in 2015 (Oguy et al., 2015) showing consistency in the product's effects (see Figure 1).

In addition, widely published data have demonstrated the effect of this additive on carcasses (yield improvement and quality of pieces). These gains are possible thanks to several product properties:

- A better feed digestibility (exploitation of fats and proteins)

- A better epithelium integrity of the digestive tract and an improvement in the ability to absorb available nutriments
- A decrease in maintenance requirements of the animal

What are the benefits of registering on markets outside Europe?

The benefits of such registration in Europe are well documented. Indeed, the customer has an additional guarantee on the reliability of the supplier and its product. What about other markets? "It was very impressive to observe the benefits of zootechnical registration outside Europe. We tend to underestimate the impact of European regulation on other countries. Indeed, lots of countries exporting to the EU are inspired by and follow our advancements closely. Those from these other countries were particularly appreciative of this registration. Finally, on the other side of Atlantic these types of natural growth promoters are very well appreciated because of the ban on antibiotics," explains Jennifer Maurin, business development manager for plant extract ranges at Pancosma. Although it was the first additive in its category (4.d), 2 other products have more recently been awarded this status, meaning there are now three additives based on plant extracts approved for poultry by the European Union.

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The XTRACT® range of feed additives consists of standardized combinations of bioactive substances that naturally occur in aromatic plants and spices. Created with Iso-Fusion Technology® and scientifically validated through extensive field trials, XTRACT® solutions promote the well-being of animals and strengthen their natural defenses.

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