Phytogenic additives: An ROI calculation

*By **Ruturaj Patil**, Global Product Manager – Phytogenics, EW Nutrition*

Global trade in agricultural products has a direct impact on the added value in regional broiler production. Due to fluctuating meat and feed prices, a tight profit margin can melt away quickly. Changes such as the use of cheaper raw materials, implemented to deal with reduced margins, may negatively affect flock health, creating a vicious cycle: If the flock also experiences increased disease pressure, the financially critical situation worsens.

What can the right phytogenic feed additive deliver for broiler producers?

It is essential to improve broiler gut health, as only healthy birds will perform and allow producers to be profitable. Producers can maintain flock performance through preventive management measures, a consistent hygiene concept, and the use of high-quality feed. For unproblematic flocks, the same measures also positively affect profit, generating a healthy return on investment (ROI).

What affects your return on investment?

In broiler production, the cost of feed is highest, with a share of 60 – 70 % of the total production costs. The proportion tends to be higher in markets that rely on importing feed raw materials (Tandoğan and Çiçek, 2016).

Let us take an example: With a compound feed price of 300 € / t as the basis, an increase of 10 € / t results in a profit reduction of 0.016 € / kg live weight. On the other hand, an improvement in feed conversion from 1.60 to 1.55 results in a financial advantage of 0.015 € / kg live weight. The best possible feed efficiency is always desirable to keep production costs low.

Another risk factor for high-yield broiler production lives in the poultry intestines: the most significant “invisible” losses result from subclinical necrotic enteritis (*Clostridium perfringens*). This disease worsens

the feed conversion on average by 11 % (Skinner et al., 2010). In the previous example, this would reduce feed efficiency from 1.60 to 1.78 points and reduce the contribution margin by 0.054 € / kg live weight. In addition, a live weight reduction of up to 12 % can be observed (Skinner et al., 2010). It is, therefore, critical to stabilizing gut health to reduce the risk of subclinical necrotic enteritis.

Practice prevention for a secure return on investment

The prophylactic use of antibiotics in compound feed was a well-known reality for decades. With the EU-wide ban on the use of antibiotic growth promoters, the occurrence of multi-resistant bacteria, and a globally increased demand for antibiotic-free chickens, producers now have had to cut down on antibiotic use.

For this reason, a lot of research has been conducted into alternative measures for maintaining good broiler health. Studies have confirmed that setting up a comprehensive hygiene concept to reduce the formation of biofilms on stable surfaces and reduce the recirculation of pathogens is a solid basis. At every production stage, irregularities can be detected through a meticulous control of performance parameters and illness symptom-centered health monitoring. Diseases can either be avoided or at least recognized earlier through targeted measures, and treatment can be carried out more efficiently.

A thorough hygiene concept and careful monitoring at every production stage are key to ensuring broiler performance.

Feed additives for intestinal stabilization

Hygienically impeccable compound feed is the wish of every animal producer to promote the development of a balanced intestinal flora. However, the quality of the available raw materials is subject to fluctuations and can therefore not be 100 % anticipated. Consequently, producers are now commonly balancing these uncertainties by using feed additives, which positively influence the intestinal flora. These products must prove their positive effects in scientific studies before they can be used in practice.

An effective solution: Encapsulated phytogenic feed additives

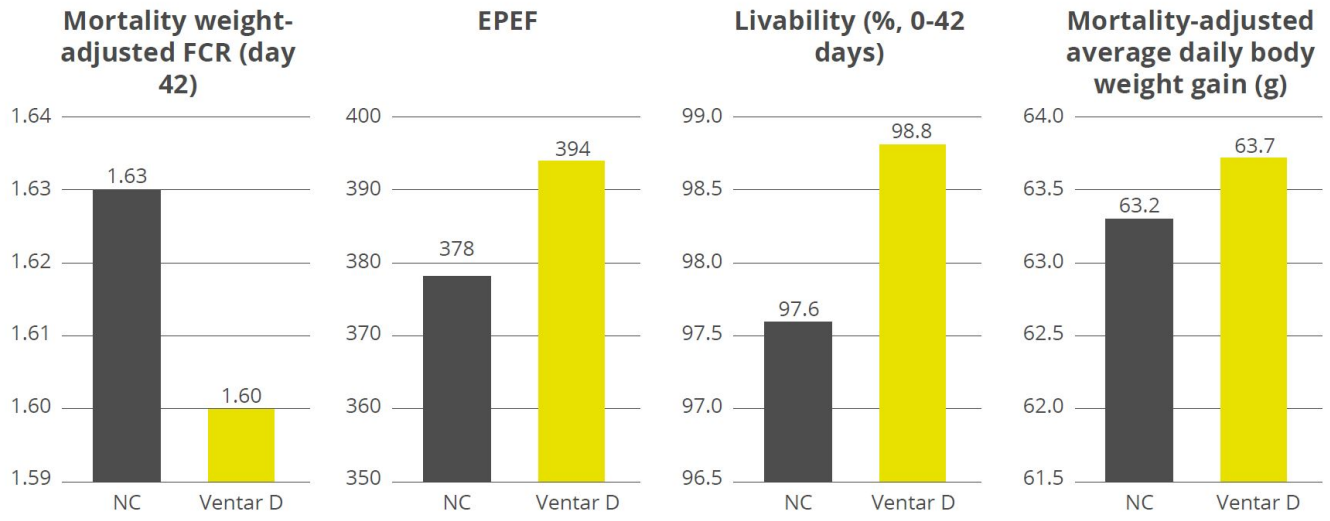
Studies have found that certain phytomolecules, which are secondary plant metabolites, can support broiler gut health. By stimulating digestive enzyme activities and stabilizing the gut microflora, feed utilization improves, and broilers are less prone to developing enteric disorders (Zhai et al., 2018).

The encapsulation of these naturally volatile substances in a high-performance delivery system is critical for the success of a phytogenic feed additive. This protective cover, which is often a simple coating, provides good storage stability in many cases. However, in addition to the high temperatures, mechanical forces also act on these coatings during pelleting. The combination of pressure and temperature can break the protective coating of the product and lead to the loss of active substances.

A complete solution: How Ventar D maximizes your ROI

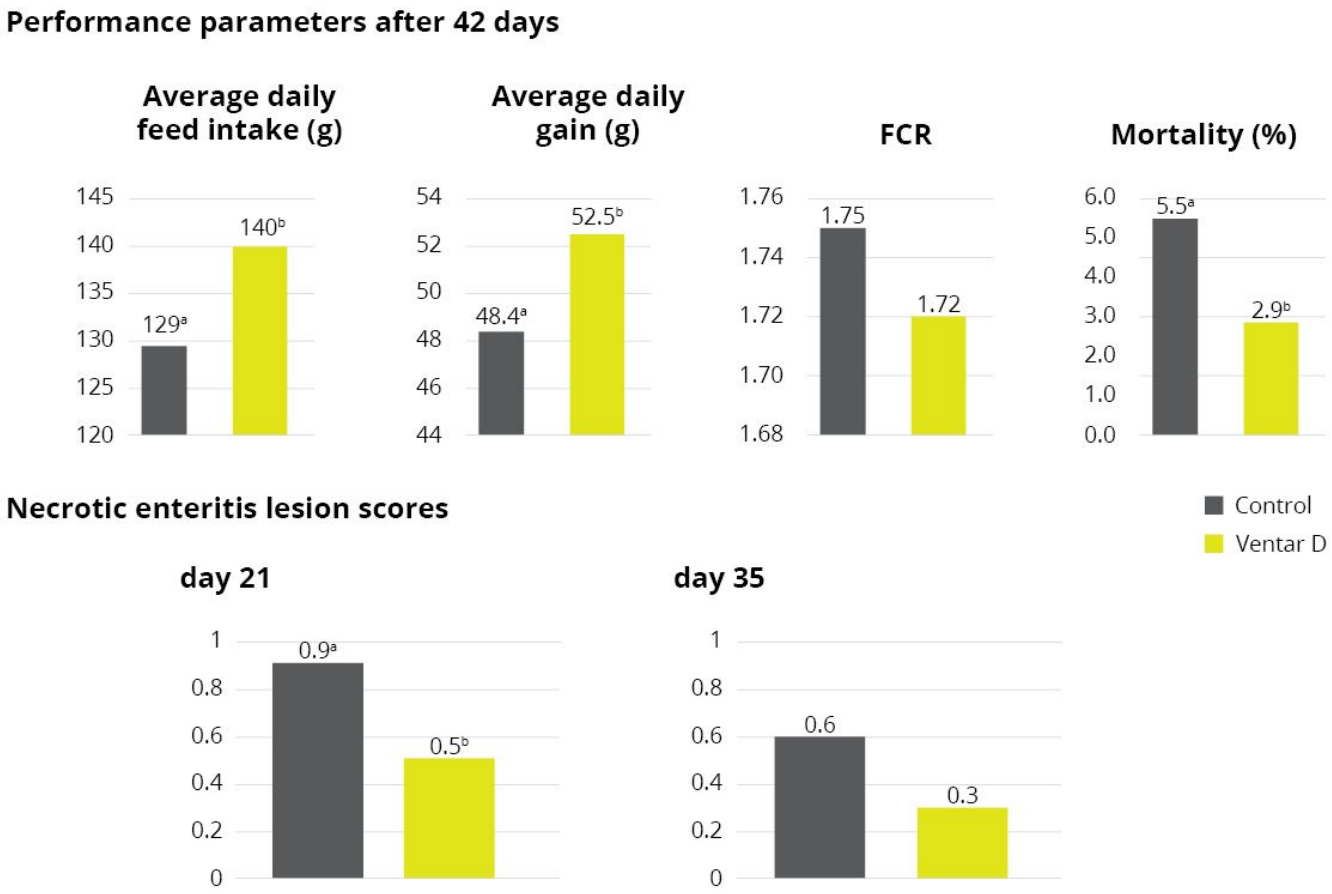
Because of the difficulties mentioned, the use of modern delivery system technologies is therefore necessary. EW Nutrition has many years of experience in the development of phytogenic products. Due to an original, innovative delivery system technology, Ventar D can offer high pelleting stability for optimal improvement of animal performance.

In particular, the positive influence of the phytogenic feed additive Ventar D on intestinal health under increased infection pressure was assessed in multiple studies. In two studies carried out in the United Kingdom, birds were challenged by being housed on used litter harvested from a previous trial. Moreover, increasing levels of rye were introduced into the diet, adding a nutritional challenge to provoke an increased risk of intestinal infections in the broilers. The use of 75 g of Ventar D per t compound feed increased the EPEF (European Production Efficiency Factor) by 4.1% and feed efficiency from 1.63 to 1.60.



With Ventar D use at 100 g / t compound feed under comparable conditions, EPEF increased by 8.9 %, and feed efficiency improved by 5 points (0.05), compared to a non-supplemented control group (NC).

Another study was carried out in the USA. In addition to performance parameters, data on intestinal health were also recorded. In the group fed with Ventar D (100 g / t compound feed), 50 % fewer necrotic enteritis-related lesions of the intestinal wall were found after 42 days. Compared to the group fed with Ventar D, the broilers of the control group showed a performance decrease of 11.8 % with an 8% lower final fattening weight and a 3 points poorer FCR.



Based on the results of the above studies, the ROI for Ventar D due to the improvement in feed efficiency by 3 and 5 points could be 1:3.5 and 1:6.5, respectively. Similarly, the net returns for using Ventar D could be 0.007 and 0.013 € / kg live weight, given the 3 and 5 points improvements in feed efficiency. The ROI for Ventar D use could be even higher thanks to additional benefits such as improvements in litter condition and foot pad lesions, reduced veterinary cost, etc., depending on the prevailing challenges.

The future of feeding is here

The first study results for Ventar D underscore that, if combined and delivered right, phytomolecules can transform broiler performance from inside the gut. Ventar D's stable delivery system ensures a constant amount of active molecules in targeted intestinal sites and, therefore, supports a favorable intestinal flora. With Ventar D supplementation, subclinical intestinal infections due to *C. perfringens* or other enteric bacteria can be very well kept in check, ensuring improved broiler productivity and production profitability.

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How to achieve sustainable antibiotic-free broiler production

by **Predrag Persak**, Regional Technical Manager North Europe, EW Nutrition

The main sustainability challenge for broiler production lies in securing enough high-quality, nutritious, safe, and readily available food at a reasonable cost. At times, feed ingredients have to be included that are not nutritionally ideal and might compromise one's broilers' health and wellbeing. However, counteracting this threat with prophylactic antibiotics is not acceptable: We must minimize the use of antibiotics to mitigate antimicrobial resistance. The way forward is to go beyond static and linear nutritional value-to-price thinking. A dynamic nutritional strategy focusing on the interdependencies between ingredients, gut, microbiome, and digestion, enables sustainable ABF broiler production.

Sustainable ABF broiler production requires a dynamic, gut health-oriented nutritional strategy

Sustainability vs. ABF production – is there a trade-off?

The United Nations' 1987 Brundtland report offers a clear definition of sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." "Ability" includes the availability of resources – and in broiler production, which is one of the most efficient livestock productions, resources have always been a top priority. As a constantly evolving industry, broiler production has been quick to adopt sustainability into its management strategies. The use of the resource that is antibiotics, however, poses particular challenges.

Humans and animals depend on antibiotics to fight microbial infections. It is essential to maintain their efficacy so that future generations can lead healthy lives. Antibiotic efficacy is under threat from the development of antimicrobial resistance, which emerges from overuse and misuse in both human and veterinary medicine. Across the globe, broilers are still raised with the assistance of antibiotics. Either for disease therapy, to prevent disease occurrence, and still, in some parts of the world, to enhance performance. Driven by regulatory and consumer demands, broiler production with minimal or no use of antibiotics is rapidly gaining importance.

The challenges of antibiotic-free broiler

production

ABF systems encounter numerous challenges since production requirements change drastically. Stock density must be lower; it takes longer to reach the desired weight; and more feed is needed to produce the same amount, with a higher risk of morbidity and mortality (Cervantes, 2015). The latter can result in more birds needing treatment with medically important antimicrobial drugs. All those challenges need to be overcome by adopting suitable strategies related to nutrition, genetics, management, biosecurity, welfare, and food safety.

As animal nutritionists, our focus lies on nutrition, feed, feed materials, additives, feed processing, feeding, and their (positive or negative) influence on the sustainability of ABF broiler production. However, we cannot look at these dimensions of production as a separate process. They are linked in the whole food chain and are affected by changes that happen in other related parts. An obvious example is feed production, which has an enormous impact on the overall sustainability of ABF broiler production:

- Due to raw material shortages, diets are becoming ever more complex, containing more single feed ingredients. For some of them, we need a better understanding of their impact on ABF broiler production (e.g., sunflower, rapeseed, beans, lupins).
- The nutritional composition of raw materials changes due to limitations in fertilizer use, and variability within the same raw material group is expected to increase.
- New food waste-reducing feed materials can enhance feed security but also require nutritional profiling to integrate them into diets.
- Local feed material production in humid and warm environments can introduce various pathogens into the feed/food chain.
- Increases in known and the emergence of new antinutrients and feed components that impair animal health, performance, and feed efficiency.
- Sustainability-driven pesticide reduction raises concerns about mycotoxins contaminating feed ingredients.
- Nutrient reduction to support gut health and, primarily, lower the excretion of nitrogen and phosphorous, negatively affects growth, nutritional standards, and the ability to freely select feed materials to include in broiler diets.
- The value (of which price is also part) of raw materials will be compromised, due to availability and nutritional variability.

Mycotoxin contaminated-feed can damage production animals' performance, health, and welfare

When striving for a sustainable ABF broiler production approach, the possibility for errors becomes higher, while the error margin becomes smaller. The solution lies in helping the animals to mitigate the impact of stressors by focusing on the interaction of ingredients, gut, microbiome, and digestion. It is a holistic approach centered on gut health. Keeping the intestines BEAUTIful will help you produce in challenging conditions without the use of antimicrobials.

Keep the broiler gut BEAUTIful and resilient to stress

The BEAUTIful formula captures the six areas producers need to target for supporting broiler gut health:

B	E	A	U	T	I
Barrier	Enzymatic digestion	Absorption	United microbiome	Transport	Immunity

Barrier

If it’s working correctly, the effective gatekeeper knows what gets in and what stays out. When the barrier function is compromised due to stress, pathogens can cause infections, disrupt health, and negatively impact broiler immunity. Necrotic enteritis, femoral head necrosis, and bacterial chondronecrosis with osteomyelitis (BCO) are common diseases that affect today’s broiler production (Wideman, 2015). As the source of nutrients, feed serves as a modulator of various physiological functions in the intestinal tract, including intestinal barrier function.

Enzymatic digestion

The gut is where endogenous and exogenous enzymes perform their hydrolysis functions to break down complex nutrients into the parts that can be used either by the intestinal tissue itself or for the whole animal. One part of hybrid enzymatic digestion is the fermentation by commensal microbes, in which complex materials form end-products of high biological values (such as short-chain fatty acids, SCFA).

Absorption

Maintaining the gut’s resorptive capacity is essential to secure the total intake of digested nutrients. Otherwise, pathogenic bacteria might use the excess nutrients to grow, form toxins, and affect the birds’ health and productivity.

United microbiome

The intestine of a broiler chicken is colonized by more than 800 species of bacteria and other inhabitants, such as viruses and simple organisms that are still unknown. By competitive exclusion and secretion of bacteriocins (volatile fatty acids, organic acids, and natural antimicrobial compounds), commensal bacteria keep the host safe from an overgrowth of dangerous bacteria (e.g., *Salmonella*, *Campylobacter*, and *Clostridium perfringens*). The fine-tuned diversity in the intestinal flora and balance in all interactions between it, the host, and the ingesta are needed for birds to stay healthy and perform well.

Transport

Birds’ digestive tract volumes are smaller than those of mammals with similar body weight. This means that they achieve more efficient nutrient digestion in a shorter retention time, averaging between 5 and 6 hours. Passing the small intestine usually takes around 3 hours, of which 1 hour is spent in the duodenum and jejunum. Transport times are affected by the feeding system and the extent to which material enters the caeca. Reflux of material from the distal to the proximal small intestine is an important feature that helps digestion and maintenance of a healthy gut.

Immunity

The intestinal microbiota is critically important for the development and stimulation of the immune system. The intestine is the key immunological organ, comprised of myeloid and lymphoid cells, and a site for producing many immune cell types needed to initiate and mediate immunity. Together with the microbiome, dendritic cells induce antigen-specific responses and form immunoglobulin A, which works in the intestinal lumen.

Natural gut health solution for sustainable ABF broiler production

In practice, supporting broiler gut health requires a holistic approach that includes natural feed additive solutions. Phytomolecules are compounds that certain plants develop as defenses mechanisms. Phytomolecules-based solutions should feature prominently in sustainable ABF broiler production approaches due to their advantageous properties:

Enhance digestion, manage variability

Sustainability necessitates efficient resource utilization. Digestion support needs to be a priority to use the available feed in its entirety. This is particularly important if antibiotics use needs to be minimized: a maximum of nutrients should be utilized by the animal; otherwise, they feed potentially harmful bacteria, necessitating antibiotic treatments. Enhancing digestibility is the focus when we are dealing with variable feed materials or feed changes that represent stress to the animal. Selected phytomolecules have proven efficient at improving performance due to enhanced digestion (Zhai et al. 2018).

Work on microbiome and pathogens

The antimicrobial activity of certain phytomolecules can prevent the overgrowth of pathogens in the gastrointestinal tract, thereby reducing dysbacteriosis (Liu et al., 2018) and specific diseases such as necrotic enteritis. Studies on broilers show that they also reduce the adhesion of pathogens to the wall of the intestine. Certain phytomolecules even possess antimicrobial characteristics against antibiotic-resistant pathogens.

Keep gut integrity

Phytomolecules help maintain tight junction integrity, thus preventing leaky gut (Li et al., 2009). As a result, the potential flow of bacteria and their toxins from the gut lumen into the bloodstream is mitigated. Their properties thus make phytomolecules a promising alternative to the non-therapeutic use of antibiotics.

Trial results: Phytomolecules enhance broiler gut health

To test the efficacy of phytomolecules, we conducted a large-scale field study in Brazil, under practical conditions. The focus was on growth performance, and no growth-promoting antibiotics were used. Lasting 5 months, the trial involved more than 2 million broilers. The birds were divided into a control and a trial group, with two repetitions per group. Both groups were fed the standard feed of the farm. The trial group additionally received 100g of Activo per MT in its finisher feed for 3 weeks. The study clearly shows that Activo supplementation improves performance parameters (daily weight gain, average total gain, and improved feed efficiency), which resulted in a higher production efficiency factor (PEF):

- Activo groups had a 3 % higher average daily weight gain and reached their slaughtering age earlier
- The final weight of Activo groups was about 2.5 % higher than in the control group
- With a 2 points better feed conversion, the animals of the Activo group achieved a 13.67 points higher PEF

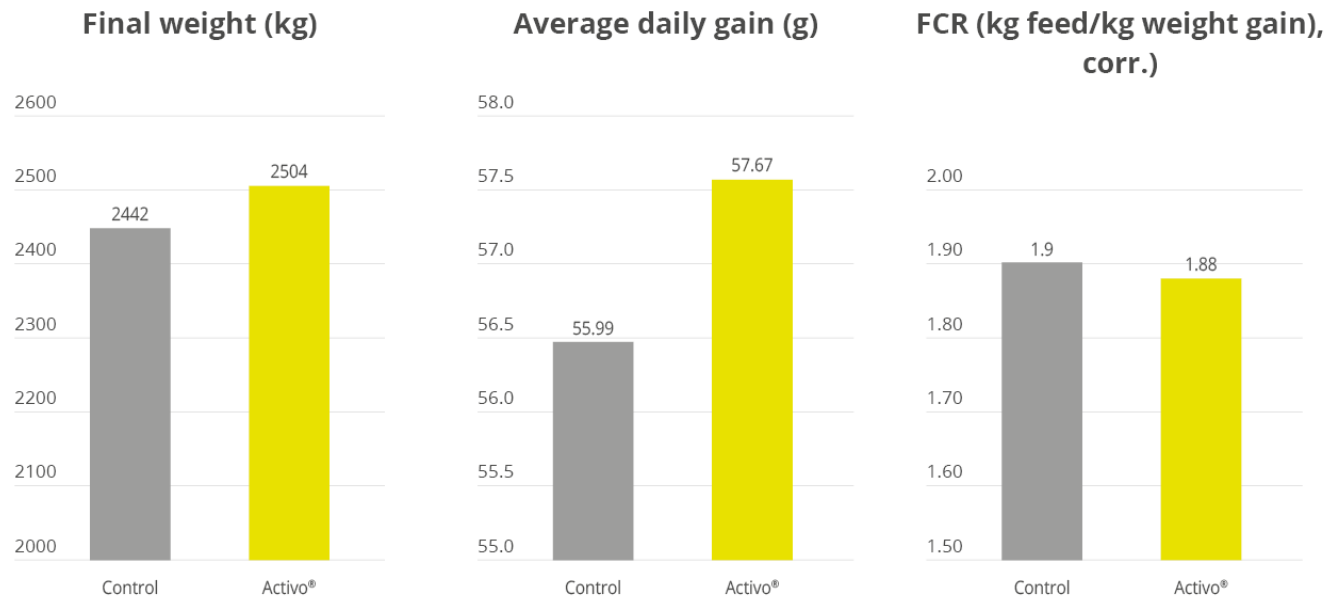

Figure 1: Broiler performance results, Activo vs. non-supplemented control group

Conclusion

Antibiotic-free broiler production is a challenging endeavor: producers need to maintain animal welfare and keep up efficiency while making farming profitable. Over time, these challenges will affect producers even more as sustainability requirements increase across all parts of the broiler production chain. On top of that, coccidiostats, which are essential for efficient broiler production, are increasingly being questioned, which will require concerted research into feed additive solutions.

To make sustainable ABF broiler production the norm, it is unavoidable to adopt suitable strategies related to nutrition, genetics, management, biosecurity, welfare, and food safety. Effective, scientifically and practically proven tools already exist: Thanks to their positive impact on intestinal health, phytomolecules reliably support sustainable broiler production without antibiotics.

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Want antibiotic-free broilers? Raise low-AB breeders

Strong demand by consumers; restaurant chains and wholesalers for antibiotic-free (ABF) meat; the threat of antimicrobial resistance; and stringent regulations on the use of antibiotics – there are many good reasons for poultry producers to strive for antibiotic-free production systems. Crucially, to successfully produce poultry meat without antibiotics requires a paradigm shift that starts right at the parent stock level, with the antibiotic-free production of hatching eggs.

Broiler breeders' gut health is linked to progeny's performance

Broiler breeders' performance is measured in terms of how many saleable day old chicks (DOCs) per hen they produce. However, within a sustainable ABF production system (also known as No Antibiotics Ever or NAE), this parameter is not seen in isolation. Breeder hens' nutritional and health status not only affect the

number of DOCs they can produce, but also the transfer of nutrients, antibodies, microbiota and even contaminants, e.g. mycotoxins, to the egg – and therefore, their progeny's long-term health and performance.

This starts with egg formation, which requires several metabolic processes in the hen to function perfectly. If the hen's intestinal integrity is compromised, for example due to mycotoxins, she will absorb fewer nutrients, which in turn affects egg formation. Mycotoxicosis has particularly insidious effects for egg formation as it can damage the liver whose biosynthetic activities strongly impact on the egg's internal (yolk) and external (eggshell) quality.

Chick embryos depend on the maternal antibodies and nutrients deposited in the yolk, including vitamin D3, carotenoids, and fatty acids, to develop normally. Eggshell quality, among other things, affects the embryo's access to oxygen, which is especially important when it develops body tissues.

Hens' ability to form healthy eggs depends on their diet and health. Research indicates that, via the impact on egg formation, broiler breeders' feeding program quantifiably influences their progeny's immune system and intestinal health. There is indeed a direct relationship between parent and offspring's gut health because the chick's microbiome is in part also inherited from the hen. The impact on DOC quality is thus one of many dimensions to consider when calibrating one's broiler breeders feeding approach.

The challenge of feeding an ABF broiler breeder

Just as their offspring, breeder hens are genetically predisposed for rapid growth and muscle development. From rearing right through to the laying period, poultry nutritionists need to carefully balance their diets and moderate weight gain in order for hens to reach their reproductive potential.

Different stages of a breeder's life cycle come with different objectives – for example, good flock uniformity in the rearing period versus egg size and hatchability in the laying phase – and thus different requirements in terms of calories, amino acids, vitamins, and minerals. What remains constant is that the actual nutrient intake depends on intestinal health, determining both the breeders' performance and, via the impact on egg characteristics, its progeny's performance.

The feeding regimes adopted to avoid hens becoming overweight can have a negative effect on their gut flora. Without antibiotics as a tool to maintain or recover optimal gut function, even mild intestinal disorders can quickly become chronical impairments that negatively impact breeders' productivity. In ABF production systems, intestinal health therefore needs to be a central focus for the feeding strategy.

Can phytomolecules improve broiler breeders' performance?

Among the plethora of feed additives, phytomolecules, or secondary plant compounds, stand out as a class of active ingredients that may help to improve gut health and thereby reduce the use of antibiotics. Synthesized by plants as a defense mechanism against pathogens, phytomolecules combine digestive, antimicrobial and antioxidant properties.

Some studies have shown that phytomolecules-based products can increase broilers' body weight gain and improve laying hens' laying rate, egg mass and egg weight. Both broilers and laying hens responded to the inclusion of phytomolecules in their diet with inclusion rate-dependent improvements in feed conversion. To evaluate if phytomolecules could similarly improve broiler breeders' performance, two trials were conducted.

Study I: Effect of phytomolecules on laying performance during peak production

The first study was set up on a farm in Thailand. In total, 40000 Cobb broiler breeders (85% female, 15% male) were divided into two groups with 8500 hens (one house) in the control and 25500 (three houses) in

the trial group. Both groups were fed standard feed. The trial group additionally received a phytomolecules-based liquid complementary feed (Activo® Liquid, EW Nutrition GmbH) via the waterline from week 24 to week 32 at a rate of 200ml/1000L during 5 days per week.

Activo® Liquid was found to have a positive influence on laying performance (Figure 1). The average laying rate increased by 7.2% during the trial period, resulting in almost 3 additional hatching eggs per hen housed. A further indication of the beneficial influence that this particular combination of phytomolecules had on gut health was a 0.2% lower mortality.

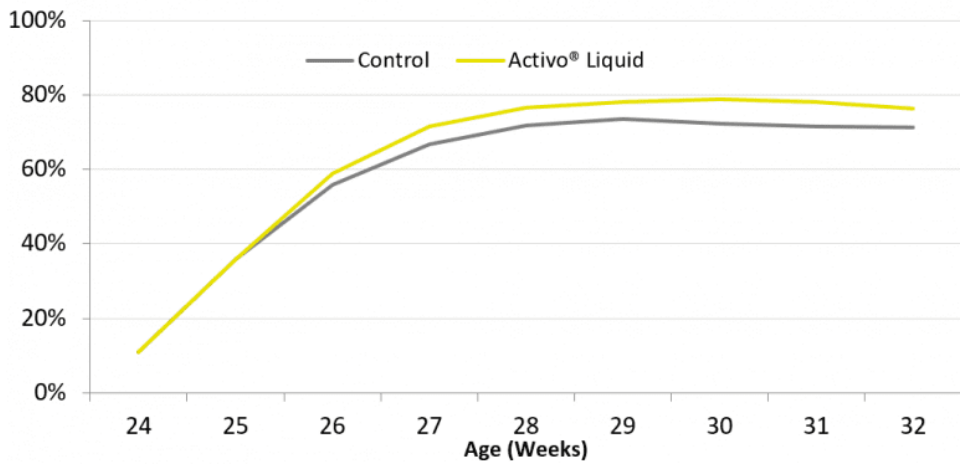

Figure 1: Laying rate (%) of breeder hens during first 9 weeks of production

Study II: Effect of phytomolecules on laying performance after peak production

For a second study, conducted in the Czech Republic, 800 female and 80 male Hubbard breeders (JA57 and M77, respectively) were divided into 2 groups with 5 replicate pens and 80 female and 8 male breeders per pen. The experiment started after the peak-production period, at 34 weeks of age and ended at 62 weeks of age. All animals received a standard mash diet. For one group a phytogenic premix (Activo®, EW Nutrition GmbH) was added to the diet at a rate of 100g/MT.

The results indicate that Activo® helped maintain the breeder hens' egg laying performance close to the breed's genetic potential (Figure 2). In the course of the experiment, Activo® supplemented birds produced 3.6 more eggs than control birds, while consuming a similar amount of feed. As a result, feed consumption per egg produced was lower for birds receiving phytomolecules than for the control birds (169.9 versus 173.6g/d, respectively).

As hatchability was not influenced by the dietary treatment in this study (P>0.5), the 3.6 extra eggs resulted in 2.9 extra day old chicks per hen produced, during the post-peak period alone.

The microencapsulated, selected phytomolecules contained in Activo® are likely to have improved gut health and feed digestibility, and thereby enhanced the animals' feed efficiency.

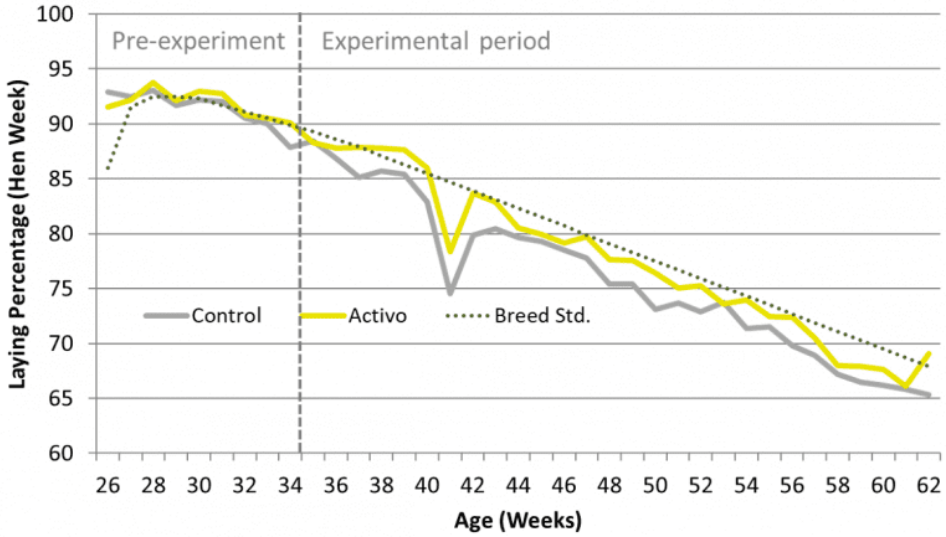

Figure 2: Laying rate (%) of breeder hens week 35 till 62

Chicken or egg? Antibiotic-free poultry production looks at the bigger picture

To successfully produce antibiotic-free poultry meat requires a systematic re-think of each component of the production process. Broiler breeders' lay the foundation for their progeny's health and performance via the egg. Breeder hens need to be in optimal health to consistently deliver optimal eggs. Without recourse to antibiotics for maintaining or recovering intestinal functionality, an effective ABF production needs to make gut health central to its feeding approach.

The trials reviewed demonstrate that selected phytomolecules quantifiably boost breeders' laying performance, increasing the number of hatching eggs and DOCs, while reducing mortality and feed consumption per egg produced. As part of an intelligent antibiotic reduction strategy, the right phytogenic products can be potent tools to help poultry producers achieve their NAE objectives.

by S. Regragui Mazili, T. van Gerwe and M. Caballero

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Challenging times for broilers? Phytomolecules, not antibiotics, are the answer

*by **Ajay Bhoyar**, Global Technical Manager, EW Nutrition*

Anyone working with today's fast-growing broiler chicken knows that it is a sensitive creature – and so is its gut health. Thanks to continuous improvements in terms of genetics and breeding, nutrition and feeding, as well as general management strategies, broiler production has tremendously upped performance and efficiency over the past decades. It is estimated that, between 1957 and 2005, the broiler growth rate increased by over 400%, while the feed conversion ratio dropped by 50%.

These impressive improvements, however, have come at the cost of intense pressure on the birds' digestive system, which needs to process large quantities of feed in little time. To achieve optimal growth, a broiler's gastrointestinal tract (GIT) needs to be in perfect health, all the time. Unsurprisingly, enteric diseases such as necrotic enteritis, which severely damages the intestinal mucosa, hamper the intestines' capacity to absorb nutrients and induce an inflammatory immune response.

The modern broiler's gut – a high-performing, but sensitive system

However, in a system as high performing as the modern broiler's GIT, much less can lead to problems. From when they are day-old chicks up to slaughter, broilers go through several challenging phases during which they are more likely to show impaired gut functionality, e.g. after vaccinations or feed changes. Good management practices go a long way towards eliminating unnecessary stressors for the animals, but some challenging periods are unavoidable.

The transition from starter to grower diets is a classic situation when nutrients are very likely to not be well digested and build up in the gut, fueling the proliferation of harmful microbes. Immunosuppressive stress in combination with an immature intestinal microflora results in disturbances to the bacterial microbiota. At "best", this entails temporarily reduce nutrient absorption, in the worst case the birds will suffer serious intestinal diseases.

Phytomolecules – the intelligent alternative to antibiotics

To safeguard performance during stressful periods, poultry producers need to anticipate them and proactively provide effective gut health support. For many years, this support came in the form of antibiotic growth promoters (AGP): administered prophylactically, they were effective at keeping harmful enteric bacteria in check. However, due to grave concerns about the development of antimicrobial resistance, non-therapeutic antibiotics use has been banned in many countries. Alternatives need to focus on improving feed digestibility and strengthening gut health, attacking the root causes of why the intestinal microflora would become unbalanced in the first place.

Phytomolecules are secondary metabolites active in the defense mechanisms of plants. Studies have found that certain phytomolecules stimulate digestive enzyme activities and stabilize the gut microflora, "leading to improved feed utilization and less exposure to growth-depressing disorders associated with digestion and metabolism" (Zhai et al., 2018). With other trials showing positive effects on broilers' growth performance and feed conversion, the research indicates that phytomolecules might also specifically support chickens during challenging phases.

The effect of phytomolecules on broilers during a challenging phase

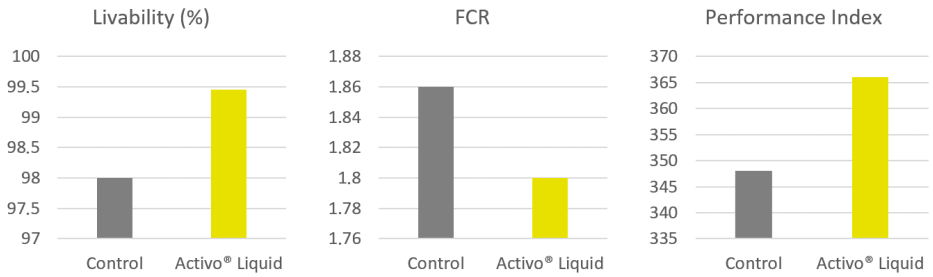
A study was conducted over a period of 49 days on a commercial broiler farm of an AGP-free integration operation in Japan. The farm reported gut health challenges in the second and third week of the fattening period due to vaccinations and changes to the animals' diets. The trial included 15504 Ross 308 broilers, divided into two groups. The negative control group included a total of 7242 birds, kept in another house.

All the birds were fed the standard feed of the farm. The trial group (8262 birds) received Activo Liquid,

which contains a synergistic combination of phytomolecules, administered directly through the drinking water. Activo Liquid was given at an inclusion rate of 200ml per 1000L of water (3.3 US fl oz per gallon of stock solution, diluted at 1:128), from day 8 until day 25, for 8 hours a day.

The results are summarized in Figure 1:

Figure 1: Improved broiler performance for Activo Liquid group (day 49)



The Activo Liquid group clearly showed performance improvements compared to the control group. Livability augmented by 1.5%, while the feed conversion rate improved by 3.2%. This resulted in a more than 5% higher score in terms of the performance index.

Challenging times? Tackle them using phytomolecules

Poultry producers take great care to eliminate unnecessary sources of stress for their birds. Nonetheless, during their lifecycle, broiler chickens face challenging periods during which the balance of the intestinal microflora can easily become disturbed, with consequences ranging from decreased nutrient absorption to full-blown enteric disease.

The trial reviewed here showed that, after receiving Activo Liquid, broilers raised without AGPs showed encouraging performance improvements during a challenging phase of feed changes and vaccinations. Likely thanks to the activation of digestive enzymes and a stabilization of the gut flora, the broilers showed improved livability and feed conversion, thus delivering a much more robust performance during a critical phase of their lives. In times where the non-therapeutic use of antibiotics is no longer an option, phytomolecules allow poultry farmers to effectively support their animals during challenging times.

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Photo Source: Aviagen

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