

Probiotics as a tool to support optimal production

An understanding of the animal gut has grown over the years, not only in regards to its basic mechanisms and how these function, but also how gut health plays a major role in ensuring effective animal production. The link with technical results is undeniable, as a healthy gut and a balanced microbiota are the motor of animal growth performance. Managing these has become increasingly more important as animal production continues to aim for more efficiency and productivity.

by **Wouter Van der Veken**,
Global Product Manager Feed Additives,
Huvepharma, Belgium.
www.huvepharma.com

Methods and concepts regarding gut health management have evolved over the years. With the rise of consumer demands, especially regarding the use of antibiotics, the interest in alternative tools to support the gut has increased. Probiotics are a good example of such alternative tools, as their efficacy has been proven time and time again.

Probiotics themselves are not a new concept in theory, and even less so in practice: live bacteria in certain fermented foods have been associated with health benefits since ancient times. However, our understanding of probiotics has evolved, including how certain bacteria can play a supportive role in animal production.

Health benefits to the host

Probiotics are viable micro-organisms which, when administered in adequate amounts, confer health benefits to the host, usually by impacting the gut (FAO/WHO).

Their mode of action can be multifactorial, which makes them a complex research topic. As a result, there remains plenty of research to be done, both commercially and scientifically.

Nevertheless, the impact probiotics can have on gut health and technical performance has been proven beyond any doubt, making them a well recognised part of proper feed formulation.



A good example is *Bacillus licheniformis* DSM 28710 (B-Act), a spore-forming probiotic with a long and extensive history in animal production.

Initial R&D identified the strain's uniqueness and recognised its potential for use in animal production, especially as the probiotic is a spore-former.

As a spore, the probiotic bacteria is protected from environmental influences and can be easily used in a wide range of feed processes. This includes feed treatments with sanitary products, as well as pelleting under different conditions.

As such, *B. licheniformis* DSM 28710's spore-forming capacity contributes to its ease of use, and ensures delivery of the probiotic at the right location.

B. licheniformis DSM 28710's mode of action is based on the principle of competitive exclusion, including outcompeting undesirable bacteria in terms of nutrients and space as well as producing potent metabolites, with a strong affinity for decreasing undesirable bacteria such as *Clostridium perfringens*.

As a result, the composition and balance of the gut microbiota are positively impacted, whilst gut integrity is maintained.

By incorporating B-Act from start until finish, it is possible to mitigate gut health challenges during all production stages.

Recent efficacy research focused on the use of B-Act in layers, showing improvements in both egg quality and egg production. For example, when B-Act was introduced to Hy-line Brown layers in a dosage of 500g/mton (1.6x10¹² CFU/mton of

feed) from 21-45 weeks of age, egg production increased significantly, whilst feed conversion efficiency improved numerically.

Supporting high-performing layers

The results were replicated in a second trial with Isa Brown hens, from 22-34 weeks of age and receiving the same B-Act dosage. In this case the laying index increased whilst feed intake decreased, leading to a significantly improved feed conversion efficiency. In a third trial, this time with Lohmann Brown layers between 25-45 weeks of age and supplemented with the same B-Act dosage, the findings were confirmed once more.

In the last trial egg quality parameters were evaluated as well, showing that B-Act supplementation improved egg shell quality and breaking strength, leading to a reduced percentage of cracked and dirty eggs.

Excreted protein in the manure was also analysed, indicating that B-Act supplementation significantly reduced the amount of excreted protein. This can be interpreted as a better functioning of the gastrointestinal tract, thus utilising the provided nutrients from the diet as much as possible.

Supporting a healthy gut leads to productive and profitable poultry. With an attractive return on investment, B-Act offers an interesting solution, combining economics with health standards in the most rewarding way. ■