

Why gut health is so important in modern poultry production

In the modern poultry production industry, the concept of 'gut health' is very important. This derives from multiple factors that can affect it including intestinal physiology, interaction of intestinal microflora, colonisation and number of bacteria, about which very little information is known.

decreased absorption of nutrients, diarrhoea, undigested feed, reduction in litter quality, pollution, and footpad lesions, etc. As a result, there is a decrease in the growth and uniformity of birds, altered feed conversion ratio, decreased production and low profits for the company.



by Eurofeed Technologies Spa, Italy.
info@eurofeed.it www.eurofeed.it

Unfortunately very little is known about the nutritional requirements of pathogenic micro-organisms, making it difficult to understand how nutrition affects the intestinal microbiology of birds.

Genetics in the modern poultry industry has resulted in extremely fast growing birds compared to the past.

As a result, changes happen in the intestinal pathophysiology as an adaptation to such rapid growth; on the other hand there is dysbiosis caused by countless unknown bacteria and by the inability of the animal to physiologically resist the consequences of the short time of their production cycle; the time is so short that the animal has to recover while the problem is still present.

All of this translates into irreversible and significant economic loss for the poultry company. That is why the concept of prevention or limitation of the damage to the gastrointestinal tract is important.

There are countless pathogenic micro-organisms (clostridium, E. coli, salmonella, eimeria, etc), and also micro-organisms which are non-pathogenic but cause stress, and intestinal damage with inflammatory bowel disease, increased transit speed,

Reduce pathogenic bacteria count

Eurofeed Technologies Spa, an Italian producer of feed additives, premixes and chelates, has proposed a new product: Shortacid. The components of Shortacid have a specific, accurate and synergistic action throughout the gastrointestinal tract.

Shortacid begins acting in the feed or water, reducing the pathogenic bacteria count, and keeps modulating the pH throughout the gastrointestinal tract, reaching even the final parts of the intestine, nourishing the intestinal mucosa, increasing the surface of the villi and creating a balancing action of the intestinal ecosystem benefiting symbiotic micro-organisms and not allowing the proliferation of pathogens by inhibiting gene expression of pathogenicity as in the case of clostridium, E. coli and salmonella (studies at the University of Ghent, Belgium).

The mono- and diglycerides of butyric acid, the main components of Shortacid, can be considered as a growth promoter because of the fact that they induce growth and development of the epithelial mucosa through the nutrition of enterocytes, thus obtaining a greater absorption of nutrients in young broilers, mainly in the first seven days of life, when it is often limited by inflammatory processes and, in some cases, necrotic enteritis, generally caused by

clostridium and coccidia. The mono-diglycerides of butyric acid form, being a fat, are stable at the pH of the stomach and pelletising temperature, do not give any unpleasant smell because they are naturally protected; they reach the intestine without being altered, and there they are separated by the pancreatic enzyme lipase into glycerol and butyric acid in a gradual manner.

The latter feeds the enterocytes supporting their reproduction, while the glycerol acts as carrier of butyric acid through the cell walls of bacteria such as salmonella, clostridium, E. coli, with a potent bacteriostatic action exerted by this short chain fatty acid.

Wide ranging benefits

In practice the benefits of using Shortacid can be summarised as follows:

- Better digestibility.
- Increased growth.
- Improved FCR.
- Greater uniformity in birds.
- Lower mortality.
- Better litter condition.
- Reduction of foot and breast lesions.
- Less environmental pollution.
- Reduction of pollution of wastewater in the slaughterhouse.

Shortacid is easy to apply, is available in liquid and powder form and, therefore, it can be used mixed in drinking water or in the feed. It is applied in a stage of the production cycle; it is stable at high temperatures (pelletising); it has no contraindications and it has no unpleasant odour. Eurofeed Technologies has undertaken several different trials in various countries with Shortacid. Excellent results at 21 days of age have shown between 50-200g of weight improvement and 50-120g of FCR improvement. ■

Table 1. Summary of Shortacid results in an Argentinian trial (full details of trials are available on request).

Treatment	Broilers	Initial body weight	Final body weight	FCR	Mortality
Control	24508	50gm	2.737	1.95	3.15
Shortacid	24606	46gm	2.930	1.83	1.62
Difference	+ 193g	-120g	-1.53%		