



Bio-Mos® Performs. Promise



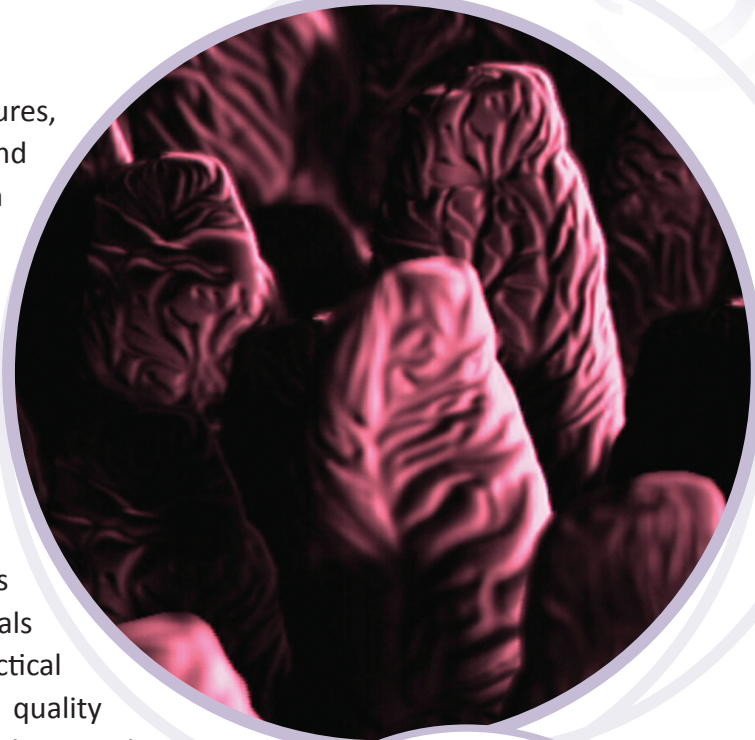


GLYCOMICS:

Form Defines Function

Glycomics, the study of sugars and their structures, represents the future of animal health and performance. Researchers have clearly shown that the structure (form) of the sugar affects its role (function) in animal feed applications.

Alltech foreshadowed Glycomics with the creation of Bio-Mos. For almost 20 years, Bio-Mos has been revolutionizing animal feeding programs worldwide and is the only natural product for maintaining intestinal health, which is supported by over 734 trials (peer-reviewed, university and practical field studies), a solid market presence, quality assurance and technically sound expertise. This is why Bio-Mos is a standard part of animal diets across the globe.



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INTESTINAL HEALTH

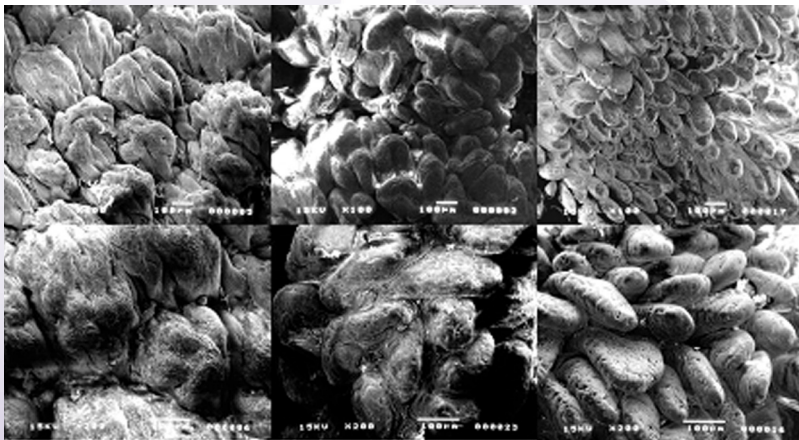
Maintaining intestinal health is important for raising profitable animals. The intestinal tract has a large surface area for the absorption and digestion of nutrients. Other functions of the intestinal tract include:

- Most metabolically active organ
- Most active hormone organ
- Digestion and nutrient assimilation
- Most active organ for defense system
- Host to billions of microorganisms

An under-nourished or unstable intestinal tract leads to poor digestion, increased exposure to toxins and depressed defense systems, which leads to increased mortality rates and a reduction in nutrient absorption. 'Feeding the gut' plays a critical role in efficient poultry production strategies and Bio-Mos is the brand of choice for helping animals achieve optimum performance.

"Everything starts with the development and maintenance of the intestinal tract, the largest organ in the body."

- Dr. Peter Ferket,
North Carolina
State University, USA



Microvilli structure of white sea bream larvae fed Artemia without or with Bio-Mos (2g/kg DM). (BP=broken parts; G = gaps)

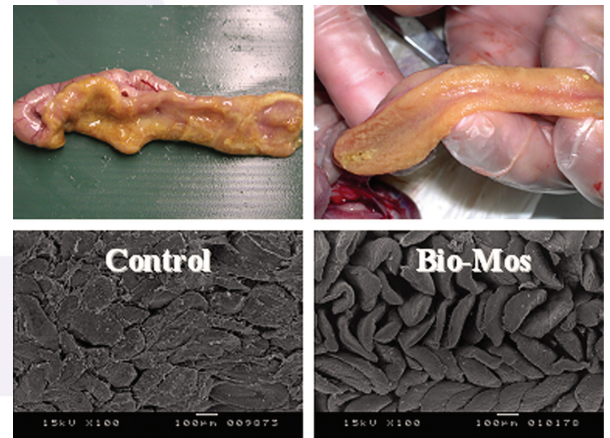


Image courtesy of Dr. Steve Collett, University of Georgia, USA
Duodenum of 21-day-old broiler fed a control diet or a diet containing 1-2kg/t of Bio-Mos.

FORM DEFINED:

What is Bio-Mos?

Bio-Mos is a unique product derived from the outer cell wall of a selected strain of *Saccharomyces cerevisiae* yeast using a proprietary process developed by Alltech. Bio-Mos is incorporated in animal diets to support gut integrity and overall animal performance.

Bio-Mos has a defined mode of action that has been confirmed by universities and research institutes worldwide. Bio-Mos is included in feed for commercial and companion animals, and is effective during all phases of growth.

Bio-Mos plays an important role in animal health and production:

Poultry

Bio-Mos supports;

- Bird performance
- Chick quality
- Gastrointestinal integrity and stability
- Efficiency
- With Bio-Mos broilers get more from the same feed.
- Utilization of protein
- Digestibility of several amino acids
- Diversity of beneficial bacteria in the gut
- Natural meat and egg marketability



Pigs (Sows, Piglets, Grow-finishers)

Bio-Mos supports;

- Pig performance
- Efficient nutrient transfer from sow to piglets
- Gastrointestinal integrity and stability
- Economic advantage
- Feed efficiency
- Natural meat marketability



Aquaculture

Bio-Mos supports;

- Gastrointestinal integrity and stability
- Benefits shrimp, fish, lobster and other aquatic animals.
- Nutrient utilization
- Natural seafood marketability



Dairy (Cows, Calves)

Bio-Mos supports;

- Reinforces natural defenses through:
 - Efficient nutrient transfer from cow to calf
 - Effective in milk replacer and starter feeds
- Natural veal, milk, cheese and dairy product marketability
- Nutritional status of the calf
- Overall performance
- Effective in milk replacer and starter feeds
- Gastrointestinal integrity and stability
- Metabolic profile in calves



Beef (Cows, Calves)

Bio-Mos supports;

- Colostrum quality (supporting data required)
- New calf performance
- Efficient nutrient transfer from cow to calf
- Gastrointestinal integrity and stability
- Economic returns
- Viable in natural beef programs



Horses

Bio-Mos supports;

- Gastrointestinal integrity and stability
- Efficient nutrient transfer from mare to foal
- Performance



SURFACE, SPEED, STRENGTH

Quality control is important when selecting a feed additive. Alltech has a commitment to manufacturing reliable and traceable ingredients and Bio-Mos is ARC certified. ARC* is a unique quality control system, based on true biological activity that guarantees consistency with every batch of Bio-Mos. An evaluation by Venture Laboratories (USA) shows the surface, speed and strength by which Bio-Mos performs:



* Aggregate Rate Coefficient

Proven

Bio-Mos is supported by 19 years of solid scientific evidence from around the world, including 734 trials from universities and research institutes, 114 peer-reviewed publications and practical field experiences. Alltech is the leader in Glycomics (the study of sugars) and clearly the form in Bio-Mos delivers the function, or performance, required for the global marketplace.

Consistency • Quality • Research • Safety • Performance

USING BIO-MOS

From start to finish, Bio-Mos is a key part of all strategic feeding programs. Bio-Mos can be incorporated into a variety of animal applications and can be used alone or in combination with synthetic or existing additives.

Suggested Rate*:

Poultry	Layers:	Starter 1-2 kg/t, grower 0.5 – 1 kg/t Pre and peak - lay 2 kg/t, laying phase 0.5-1 kg/t
	Broilers (replacement):	Starter 2 kg/t, grower 1 kg/t, finisher 0.25-0.5 kg/t
	Broilers (with AGP):	Starter 1-2 kg/t, grower 0.5-1 kg/t, finisher 0.25-0.5 kg/t
Swine	Sows:	Gestation 1 kg/t, lactation 1 kg/t
	Piglets:	Creep feed 3 kg/t, pre-starter 2 kg/t, starter 1 kg/t
	Grow/finisher:	Grower 0.5-1 kg/t, finisher 0.25-0.5 kg/t
Ruminants	Dairy cows:	10-20 g/head/day
	Calves:	2-4 g/head/day – 2 kg/t feed
Aqua	Shrimp	2 kg/t
	Fish	2-4 kg/t
Horses	All classes	1-2 kg/t

* Rates can be adjusted depending on local conditions

From start to finish: Bio-Mos Performs. Promise.

For over 32 years, Alltech has been researching and providing all-natural, nutritional solutions to the challenges of the animal production industry. With the proven success of brands such as Yea-Sacc®, Sel-Plex®, Bio-Mos®, Integral®, Bioplex®, NuPro®, Optigen® and Allzyme®, the company's global product line is a unique example of how all-natural technologies backed by constant research can move the industry forward.







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