

Improve Animal Gut Health and Performance

Lumensa helps create a healthier gut to keep your animals thriving

Animal production efficiency hinges on gut health. A healthy gut is critical to the digestive and immune systems, meaning animals can better manage through stress events. Lumensa[™] postbiotic helps support improved digestive health, stronger immune systems and overall better gut performance.







Manage the gut microbiota to help animals better manage stress

Research into how animals respond to stress and the role nutrition plays in helping them manage through stress events is a relatively new area of scientific study. What researchers are discovering is that when the gut and microflora are thriving, the animal is better able to overcome stress, making optimal gut health of vital importance to the performance of production animals.

Animals under stress may exhibit the following responses:

- A weakened immune system limiting the animal's ability to fight foreign organisms.
- An immature gastro-intestinal tract lacking beneficial microflora.
- Compromised intestinal health leading to diarrhea, reduced appetite.
- Decreased feed intake and efficiency.
- Heightened risk of oxidative cell damage.

Adding Lumensa postbiotic to animal feed helps support animal health and unlocks performance by improving digestive and immune health, which can lead to:

- Enhanced feed conversion
- Improved weight gain
- Reduced mortality
- Reduced pathogen outbreaks
- Overall better animal performance

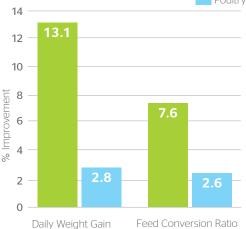
Lumensa Helps Unlock Animal Performance

Beef Poultry

Animals fed Lumensa postbiotic experienced better gut and immune health. High-functioning digestive and immune systems can promote better daily weight gain and feed efficiency.

Average improvements of daily weight gain (DWG) and feed conversion ratio (FCR) in animals fed Lumensa compared to those without. Poultry: 8 trials under stress conditions (heat) in USA; 2015-2017. Beef: 16 DWG trials and 6 FCR trials in USA; 1981-1987.

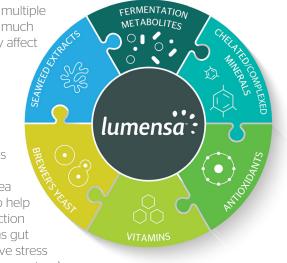




Multiple components work together to keep the gut healthy

Lumensa postbiotic contains multiple components that fit together much like puzzle pieces to positively affect three areas:

• Improved gut integrity: improves lesion scores (helps support nutrient absorption, weight gain, animal health); promotes healthier villus growth (increases absorptive area and nutrient transport to help improve enzyme production and digestion); maintains gut barrier to reduce oxidative stress (supports healthy immune system)



- Modified gut microbiota: increase in beneficial strains, such as higher energy-harvesting bacteria, which can improve feed efficiency in the gut
- **Reduced* pathogenic bacteria:** less incidence of harmful bacteria in the intestine, such as *E. coli, Salmonella spp., Clostridium perfringens*

*Competitive exclusion of pathogenic bacteria.

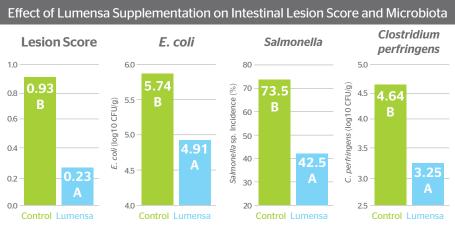
Each Product Component of Lumensa Plays a Key Role

Product Component	Response
Fermentation Metabolites	 Prevent gut microbiota dysbiosis/imbalance Improve gut integrity and immunity Decrease oxidative stress
Seaweed Extracts	Decrease oxidative stressSupport immunity and antimicrobials
Brewer's Yeast	Improves gut integrity and immunity
Chelated / Complexed Minerals	 Provide less reactive and bioavailable form of minerals Act as coenzymes in many metabolic processes Improve gut microbial balance and immunity
Vitamins	Support antioxidant systems and immunity

The comprehensive solution to improved gut health

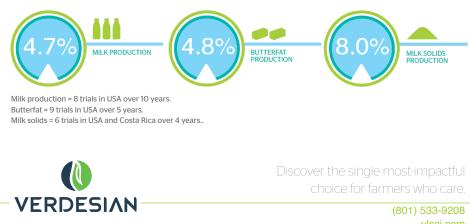
Lumensa features multiple components that work together to support gut health, minimize the impact of stress events and produce healthier animals. In fact, research shows Lumensa is a key piece of any animal nutrition program, particularly as farmers strive to unlock animal potential and performance.

Lumensa for Poultry



Means with different letters are significantly different (P < 0.05). Dietary Lumensa supplementation reduced intestinal lesion score, *E. coli* count, *Salmonella* incidence and *Clostridium perfringens* count at day 21. Trials conducted with AHPharma, Salisbury, MD, 2017.

Lumensa for Ruminants



Lumensa is produced following good manufacturing practices and National Animal Supplement Council guidelines. It does not contain Genetically Modified Organisms and uses only materials on the FDA Generally Recognized as Safe List. It utilizes the highest quality feed, food and FCC/USP-grade materials.



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