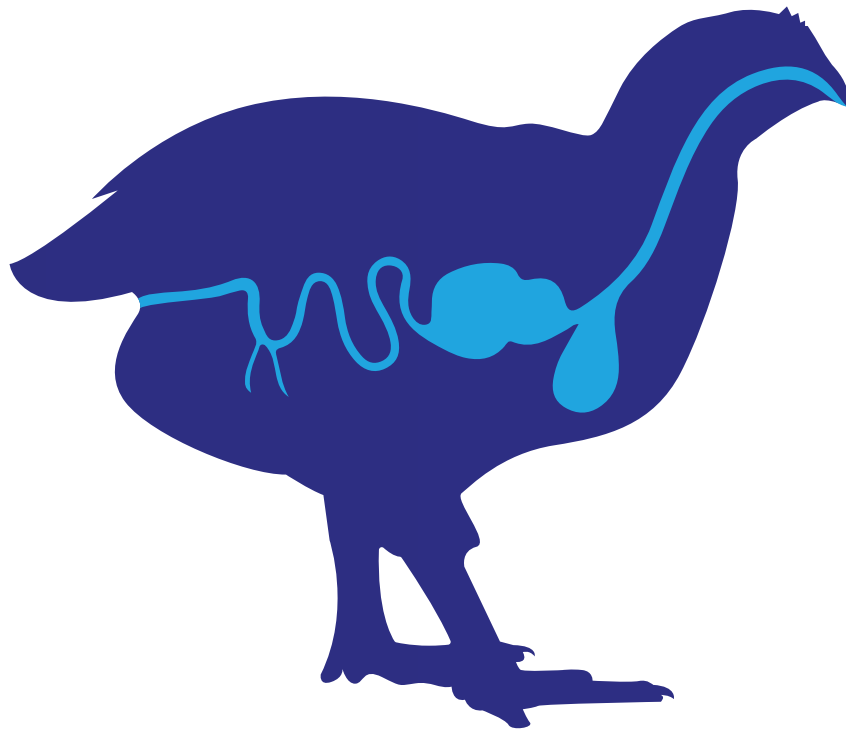


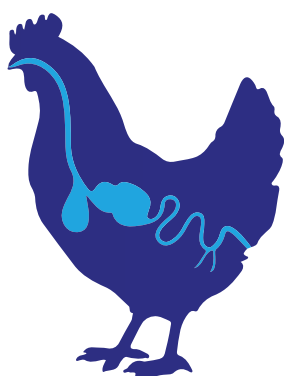
GBM Enhanced



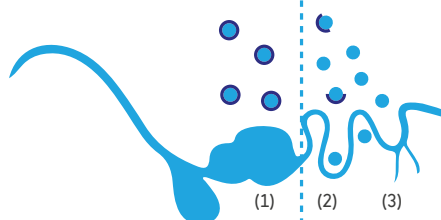
GBM Enhanced

GBM Enhanced is a unique blend developed for poultry. The synergy of the ingredients results in an optimal gut health and integrity and a positive gut microflora balance. This promotes the feed digestion, the nutrient absorption and assimilation.

GBM Enhanced	
What is it?	Encapsulated calcium butyrate in combination with calcium lactate and SAN-protect (HSCAS)
Why coating?	Due to the coating, GBM Enhanced is not destroyed in the crop, nor is it absorbed in the stomach so it can reach the small intestines.



Coated calcium-butyrate vs Calcium-butyrate



- (1) Coating: by-pass stomach
- (2) Lipase: Ruptures coating
- (3) Slow solubility and gradual dissociation

Physiological effects of GBM Enhanced

- Development and protection of the intestinal villi
- Fuel for cells that build the intestinal wall
- Stimulation of digestive enzymes
- Regulation of energy metabolism
- Improved digestion
- Larger surface area for nutrient absorption
- Reduction of intestinal inflammation
- Strengthening intestinal integrity

Effect on bacterial flora

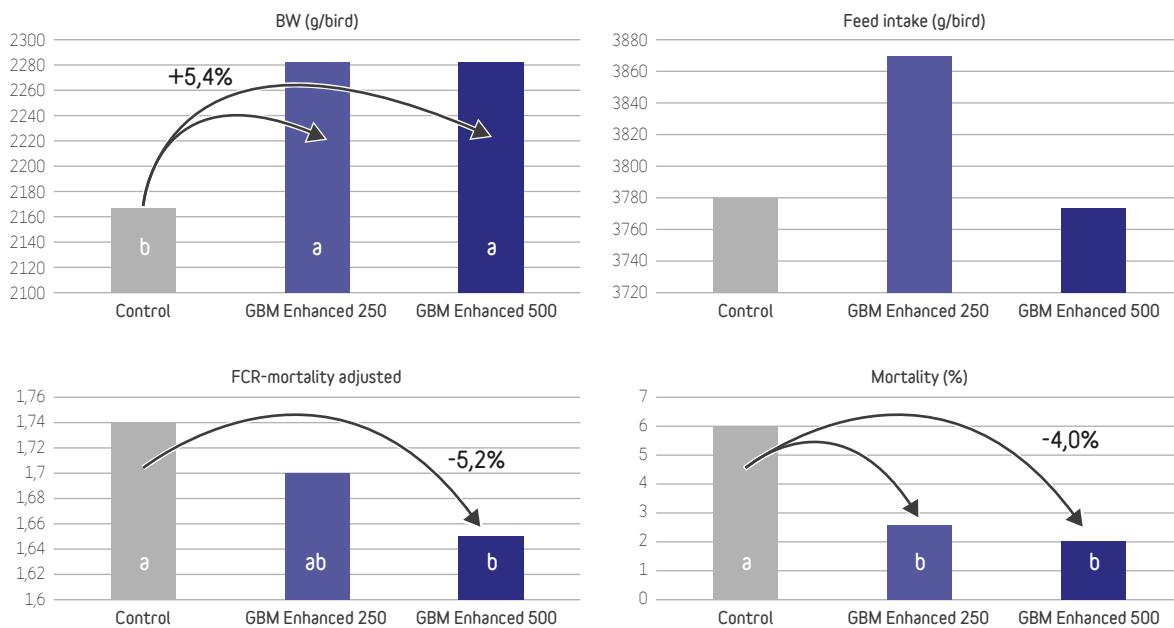
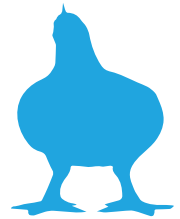
- Inhibition of pathogenic flora
 - Clostridium Perfringens
 - Salmonella
- Action along the entire length of the digestive system (from stomach to caecum)

Key benefits of using GBM Enhanced product:

- Positive effect on health and zootechnical performance, FCR, laying rate, egg weight, shell quality (less breakage, less hair-cracked and dirty eggs) and bone health
- Helps maintain the natural balance of intestinal flora (butanoate anion)
- Stimulates the differentiation and growth of the intestinal wall (butyrate)
- Easy to mix and use
- Does not dissociate in the stomach (bypass in monogastric animals)

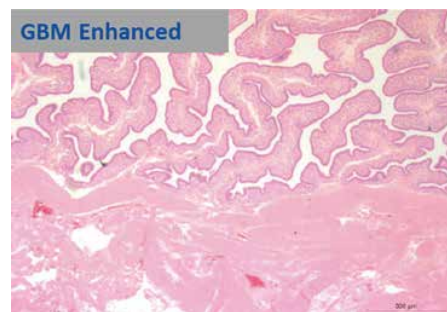
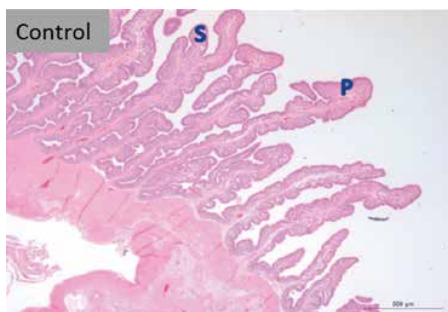
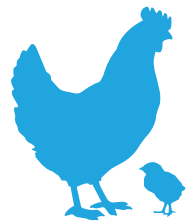
GBM Enhanced *in vivo* proven result in broilers:

GBM Enhanced increase zootechnical performance and improve animals sanitary status



SPFR-Athens (monitored by Eastman), USA 2020.
 Trial period: d0 until d42. 2T x 10 pens/T x 50 birds/pen.
 Control: GBM Enhanced 250g/ton; GBM Enhanced 500g/ton

GBM Enhanced *in vivo* proven result in breeders:

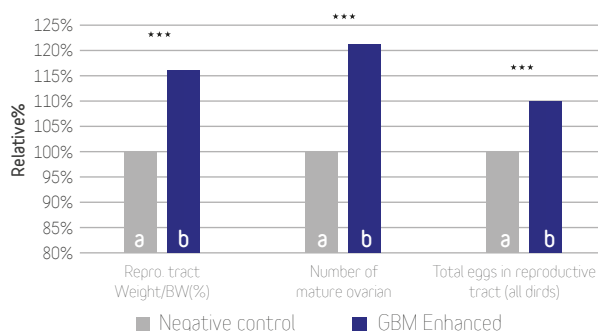


Long, slim primary folds (P) with secondary folds (S) are characteristic feature of the uterus.

	Control	GBM Enhanced
Uterus: primary fold width (µm)	143.6	166*

*p-value<0.05

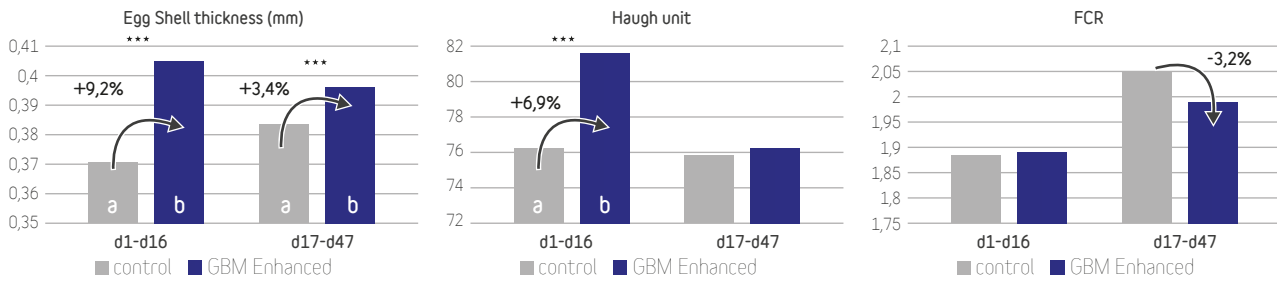
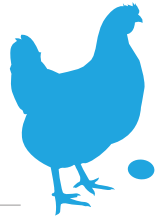
Birds receiving GBM Enhanced show a more developed reproduction tract and more mature follicles in the ovary which allows a longer laying period



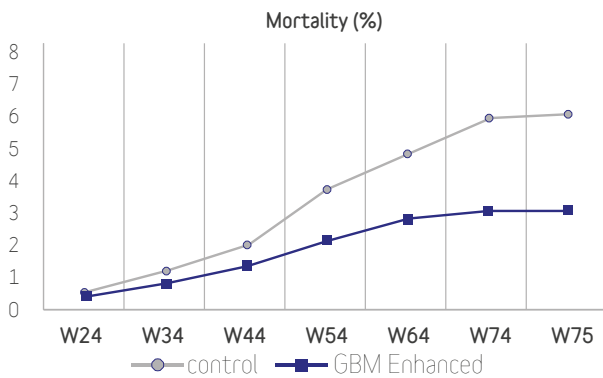
Glasgow university (experimental station)- United Kingdom 2015.
 Trial period: from 18 to 61 weeks. 2T x 15 broiler breeders/T (9 for histological measurements).
 control: negative control without additive; GBM Enhanced at 1kg/ton

GBM Enhanced *in vivo* proven result in laying hens:

GBM Enhanced improve egg quality and feed conversion ratio in laying hens



Wroclaw University of Environmental and Life Sciences, Poland 2021.
 Trial with laying hens of 29 weeks old (duration: 47 days). 2T x 6 pens/T x 3 layers/pen.
 Control (without additive); GBM Enhanced at 1kg/ton.



Field trial (commercial Layer company of 4 millions hens)- Italy 2018.
 Trial period: from W18-W75 (whole production period). 2 houses of 200 000 birds.
 Control (without additive); GBM Enhanced at 1kg/ton

Dosage recommendations:

- 750 g/T for Starter
- 500 g/T for Grower
- 500 g/T for Finisher

- 500-1000 g/T for Rearing period
- 1000 g/T for Breeding period

- 500 g/T from week 2 till week 44
- 1000 g/T after week 44

- 1000 g/T for Starter (1 + 2)
- 750 g/T for Grower (3 + 4)
- 500 g/T for Finisher (5 + 6)



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