



**AGRAVIAL**

more with less

# AGRAVIAL PRESENTATION

# COMPANY PHILOSOPHY AND VISION



AGRAVIAL is a company that offers agricultural solutions with core meaning “more with less”.

“More with less” is our way for sustainable future of earth.

More qualitative goods, solutions and services with using new technologies and science breakthroughs which leads to using less materials for production causing sustainable and responsible usage resources of our planet.

Through the use of advanced technological developments, today we already need far less resources to produce the same amount of meat, milk, eggs, fish and shrimp than fifty years ago. Yet despite these efficiency gains, there's still room for improvement as the productivity of livestock and fish is still below its potential.

By improving feed efficiency we need less feed to produce same amount of livestock or fish protein. These advances result in a significant reduction of energy use, carbon footprint and land occupation per kilogram of milk, pig, broiler meat and fish.

**Our purpose is to help clients succeed, so they can do job more affordably, more efficiently and more sustainably.**



AGRAVIAL HELPS PRODUCERS  
AND FARMERS FEED A GROWING  
WORLD IN EFFICIENT WAY

MAIN VALUES OF COMPANY  
ARE INNOVATION, OPEN MIND  
AND TRUST



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T +372 644 40 12 E [info@agravial.eu](mailto:info@agravial.eu) | [www.agravial.eu](http://www.agravial.eu)



## Competitive Pricing

Competitively priced without compromising on quality. Simple, Clear, Transparent.



## High Velocity

Quick onboarding and responsive service - you're always a priority. Efficiency is our trademark.



## EU Quality

Solutions meet GMP+ and FamiQS standards, ensuring full traceability and compliance. European quality, global reliability.

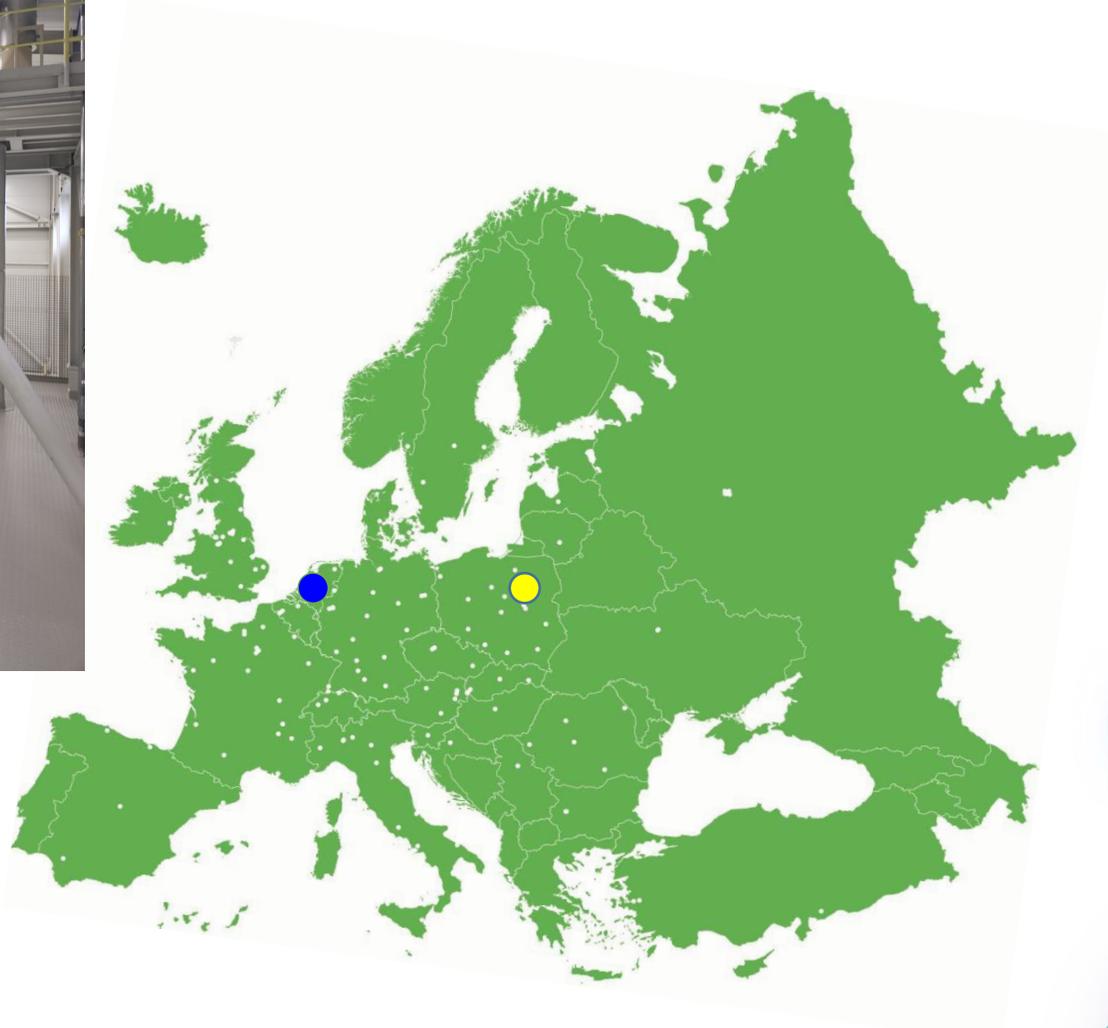


## Tailored Flexibility

Small trials, large orders, custom formulas, we quickly adapt to your needs. Provide what you need, when you need it.

# PRODUCTION

Manufacturing sites are accredited to meet standards GMP+ and our quality management systems include the application of the principles Hazard Analysis and Critical Control Points (HACCP) to ensure full traceability and high quality assurance



- PL manufacturing site
- NL manufacturing site





# NUTRIENT EFFICIENCY MAXIMIZERS





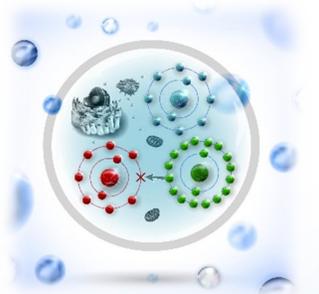
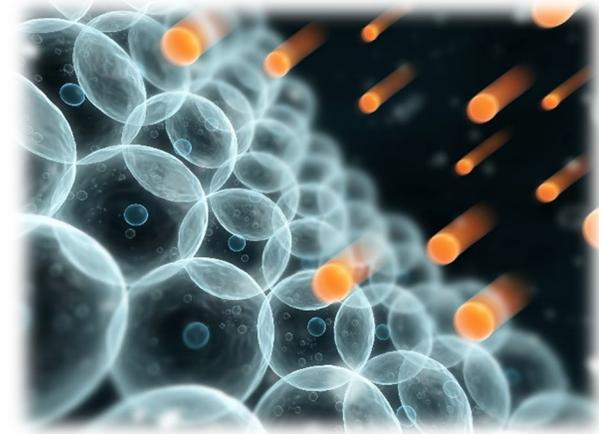
The unique mixture of synthetic and natural antioxidants for the production of feed for all types of animals, as well as for the preservation of such raw materials of the protein group as fish meal and MBM.

It is used to protect feed products from oxidation

Protects the ingredients of feeds, premixes, concentrates, feed raw materials, MBM and fish meal, sunflower, soybean, rapeseed meals from oxidation

## Benefits

- ✕ Provide effective and long-lasting protection of raw materials and compound feed against the oxidation process, acting directly on the formation of free radicals
- ✕ Allows to avoid the deterioration of the palatability of raw materials and compound feed, as well as loss of nutritional quality and negative impact on productive parameters
- ✕ Significantly increases the shelf life of raw materials and compound feed



Oils & Fats



Animal feed



Pet Food

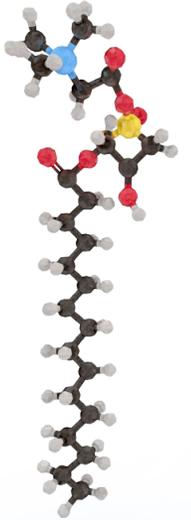
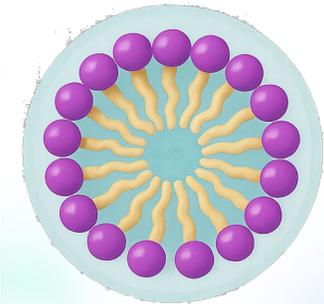
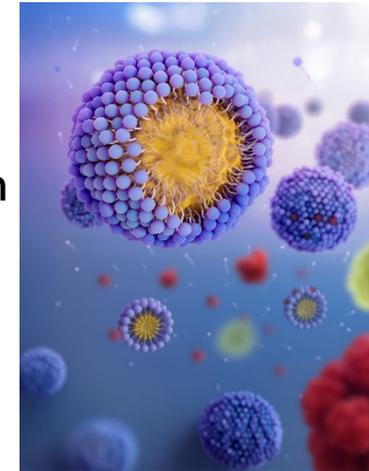
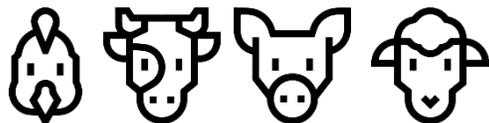
It consists of **functional lysophospholipids** obtained from soy lecithin, which have a unique molecular shape and act as digestion stimulators at the cellular level.

Improves absorption of fats and other nutrients, improves animal productivity and efficiency of feed consumption.

Added to compound feed during its production at farms, by means of multi-stage mixing at the rate of 250 g/t - 750 g/t

#### Main benefits

- ❖ Minimizes nutrient loss by improving cell membrane absorption
- ❖ Increases energy saving when making feed
- ❖ Increases growth productivity of young animals
- ❖ Improves the weight and quality of eggs
- ❖ Increased variability of raw materials used in compound feed

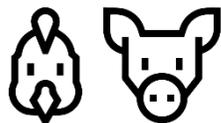


Complex **multi-enzyme complexes** for breaking down non-starch polysaccharides and phytates with high thermal stability.

A wide spectrum of action of enzymes and a flexible dosage system allow you to vary when forming rations and when choosing different sources of raw materials.

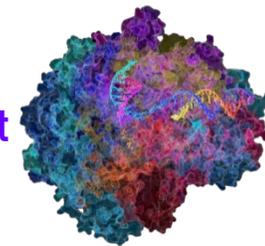
The solution is specially designed to improve the overall digestibility of raw materials. A clever combination of micro-enzyme composition to increase the availability of nutrients and additional absorption of amino acids provides technologists with a complete tool for use in the intestine of the animal.

These biocatalysts increase the availability of nutrients, significantly exceeding the endogenous capabilities of the monogastric animal itself.



## Benefits

- ❖ Reduces the viscosity of the content
- ❖ Improves digestibility
- ❖ Positive effect on fermentation in the intestines
- ❖ Reduces the humidity of the litter
- ❖ Reduces feed conversion rate





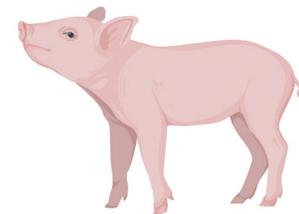
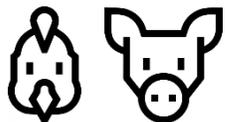
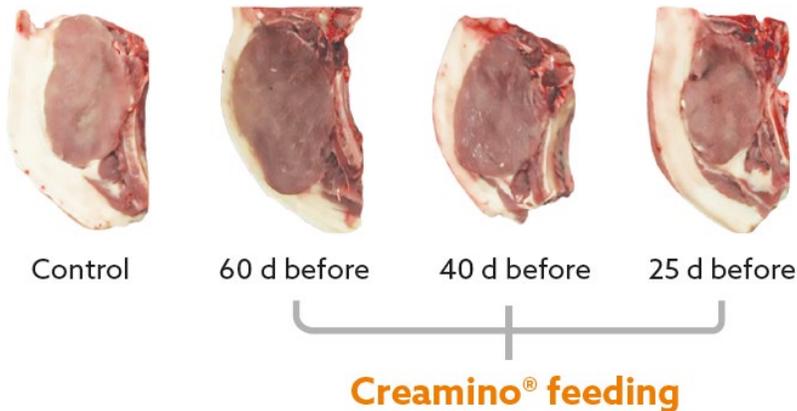
# CREAMINO



Creamino® is a granulated free-flowing preparation of Guanidinoacetic Acid (GAA). This feed additive supplies animals with GAA, the metabolic precursor of creatine and acts therefore as a source of creatine, an essential biomolecule for cellular energy metabolism.

Creamino® delivers creatine, a lost nutrient in poultry nutrition. Creatine maintains essential high ATP levels in cells, and therefore for cellular energy metabolism.

## ENERGY FOR HEALTHY GROWTH



## Benefits

- ❖ Proven reduction in cases of higher heat stress mortality.
- ❖ Significantly reducing of severe and medium myopathies (e.g. wooden breast).
- ❖ Carcass yield is improved due to enhanced muscle growth.
- ❖ Creamino® at a dosage of 0.06% compensate up to 100kcal/kg feed.
- ❖ Increased egg weight per kg feed
- ❖ Increase in low performance flocks



# PELTEXBOND



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## CONCENTRATED & COST EFFICIENT PELLET BINDER

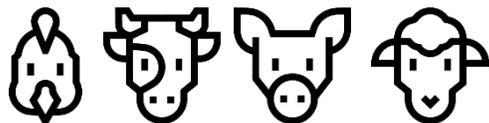
Peltextbond is a low inclusion pellet binder that can be added to all kind of feeds to improve pellet quality.

Peltextbond is effectively using for :

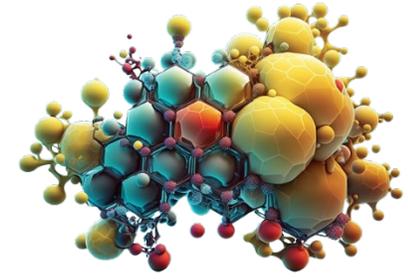
- ✓ Strong durable pellets
- ✓ Fewer fines

### ADVANTAGES OF PELTEXBOND:

- ❖ Can be used in all pelleted feeds
- ❖ Ideal for heat sensitive and hard running
- ❖ Low levels of inclusion (0.10-0.30%)
- ❖ Better energy efficiency
- ❖ Increased productivity
- ❖ Extension of die and roller lifetime



**NHP100**  
Portable  
Pellet Durability Tester



## SENSORY SOLUTIONS FOR ANIMAL WELL-BEING & HIGH PERFORMANCE

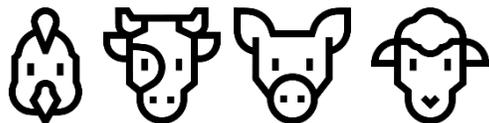
### BETTER FEED CONSUMPTION

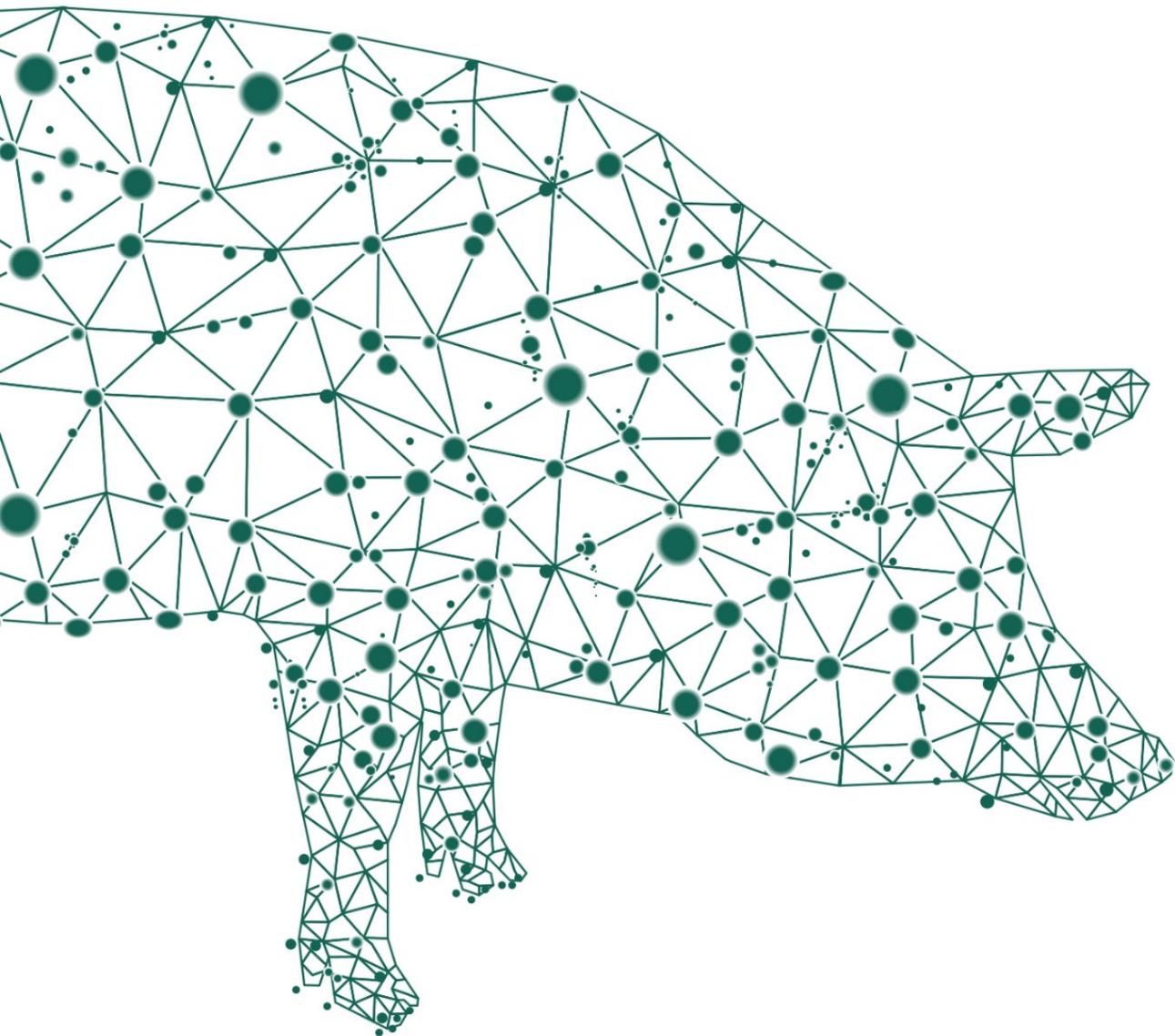
A high-performance sensory solution line designed to provide feed with a distinctive long-lasting aroma and a powerful uniform taste that will mask unpalatable components of the diet and promote feed intake.

The first step between an animal and its feed is the smell, quickly followed by the physical aspect and then the taste.

Solutions act at different levels to promote the feed palatability.

-  Functional flavourings
-  Sweeteners
-  Appetite stimulation
-  Masking solutions against bad tastes





# MYCOTOXIN DEACTIVATORS





# MELT'N'SORB



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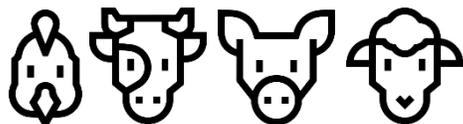
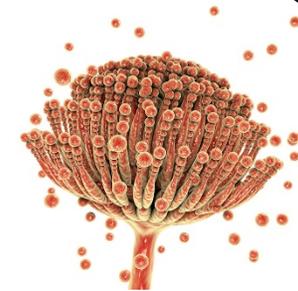
Unique innovative technologies to protect animal health

MELT'N'SORB brand mycotoxin deactivation solutions have a high effect of detoxifying the animal body from various toxins and are innovative solutions for maintaining animal health by binding and deactivating mycotoxins.



**Mycotoxins deactivation strategies** with MELT'N'SORB:

- ❖ **Maximum adsorption of polar mycotoxins** by complex action of unique modified mineral clays
- ❖ **Binding of non-polar mycotoxins** and strengthening of the immune system through the use of triple-layer adsorbents and health-enhancing polysaccharides
- ❖ **Recovery and maintenance of the liver, kidneys and pancreas** due to the action of carefully selected mixtures of substances with hepatoprotective and anti-stress functions
- ❖ **Biotransformation of mycotoxins** - a unique combination of special enzymes which transforms mycotoxins into non-toxic, safe metabolites.



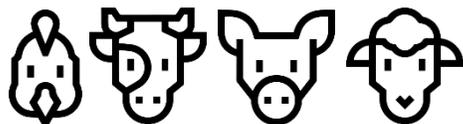


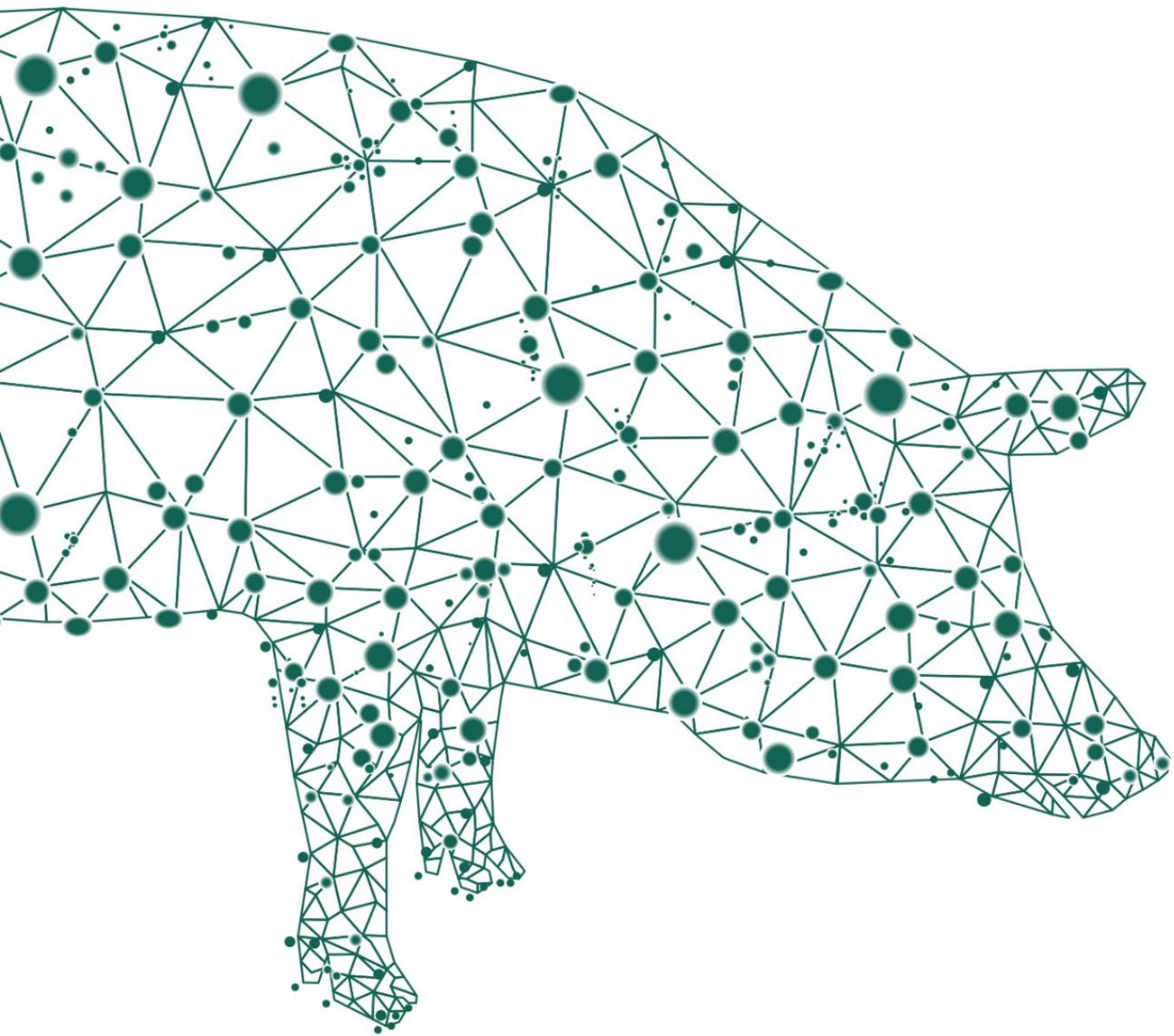
Multi-component product for protecting animal health by ensuring high defence against mycotoxins.

TOXIDAL is a binding and mycotoxicosis prevention solution for introduction into feed raw materials and finished feeds, containing efficient sepiolite, bentonite, montmorillonite, yeast cell walls, premium quality diatomite and silymarin extract, which effectively adsorb mycotoxins particles and control the risk of mycotoxicosis in animal nutrition.

**Mycotoxins deactivation strategies with TOXIDAL:**

- ❖ **Maximum adsorption of polar mycotoxins** by complex action of unique modified mineral clays
- ❖ **Binding of non-polar mycotoxins** and strengthening of the immune system through the use of triple-layer adsorbents and health-enhancing polysaccharides
- ❖ **Recovery and maintenance of the liver, kidneys and pancreas** due to the action of carefully selected mixtures of substances with hepatoprotective and anti-stress functions





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# GIT HEALTH SOLUTIONS





# BEX Pathogen Control



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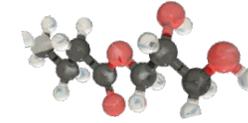
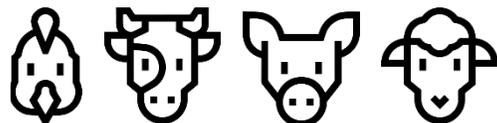
Solution contains a carefully selected mix of short and medium chain glycerides to stimulate optimal gut homeostasis. **Monoglycerides of propionic-, butyric-, caprylic- and capric acid** are used to improve overall health and performance.

Direct antipathogenic activity is mainly determined by the disruption of the cell membrane of bacteria and the fatty membrane of the virus.

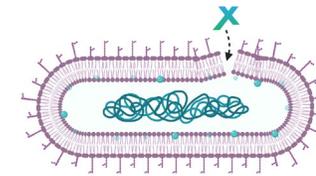
Improves the body's natural defense systems, increasing the titer of antibodies, creating a more active immune system. This leads to better protection against pathogenic microorganisms during infection.

## Benefits

- X** Control of Gram-positive bacteria
- X** Control of Gram negative bacteria
- X** Improve microbiome balance

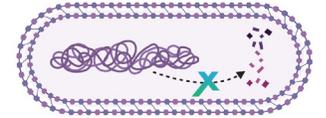


**BACTERIAL CELL MEMBRANE DISRUPTION**  
Gram-positive bacteria

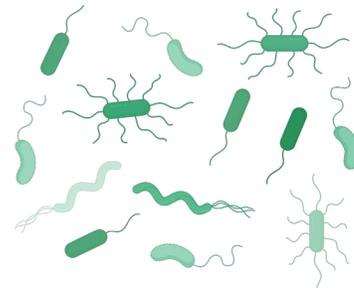


- X** Membrane alteration
- X** Increase permeation of the cell
- X** Inhibit cell transmembrane signaling

**ENTRANCE TO BACTERIAL CELL**  
Gram-negative bacteria



- X** DNA alteration
- X** Inhibit the production of bacterial proteins





# BEX Body Defence



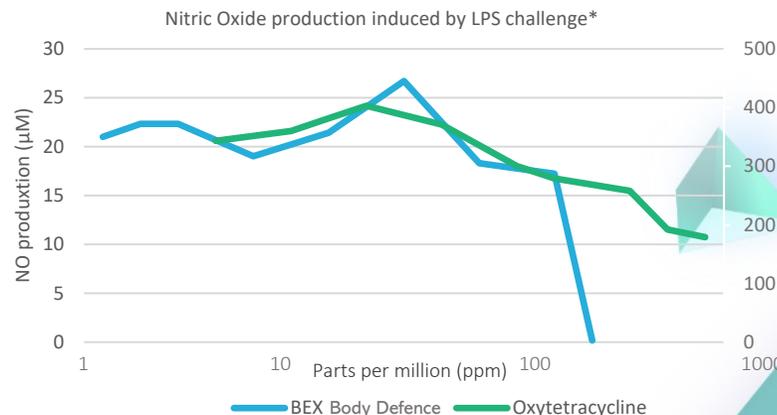
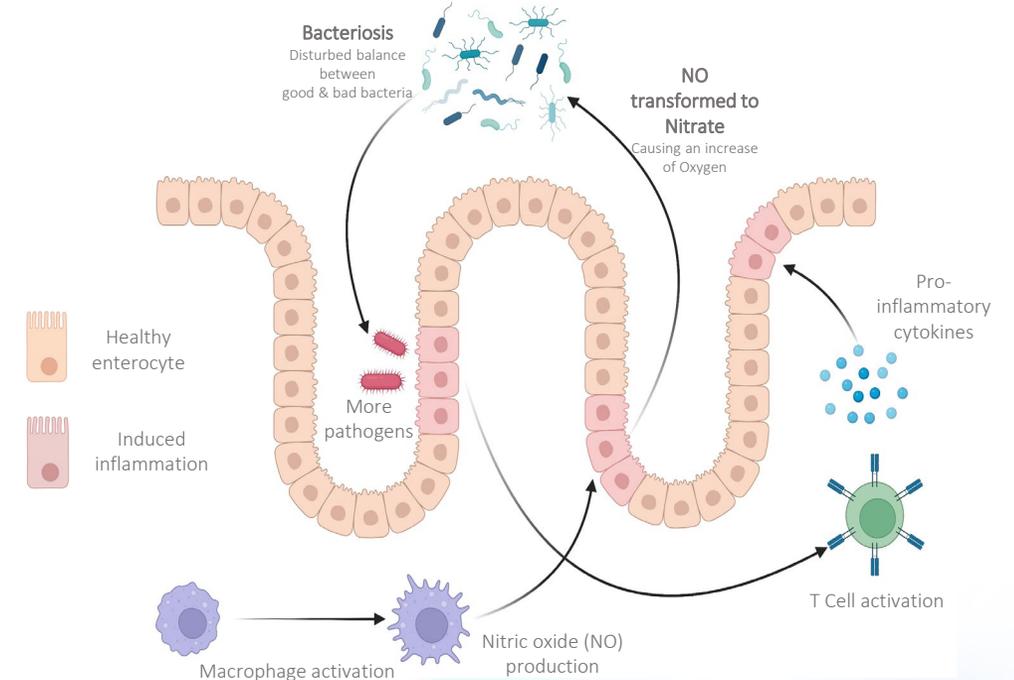
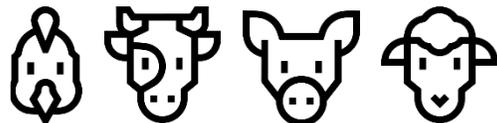
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Active solution **against several gram-positive bacteria** (eg, Streptococcus suis, Staphylococcus aureus, Clostridium perfringens, Enterococcus faecalis) **and fat envelope viruses** (eg, infectious bronchitis virus, PRRS virus).

**Glycerides of lauric acid** have shown to be active against a broad range of Gram-Positive bacteria. Studies suggest that it disrupts the lipid bilayer of the bacterial cell membrane, forming micelles and eventually inducing cell lysis. A similar effect is observed in fat enveloped viruses where the viral lipid bilayer assembly is inhibited by monoglycerides. Furthermore, it is heat resistant, non-corrosive and it doesn't induce resistance in pathogens.

## Benefits

- X Strengthens the immune system**
- X Inhibits Gram-positive bacteria**
- X Inhibits fat-enveloped viruses**



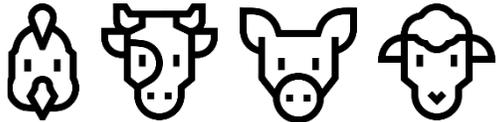
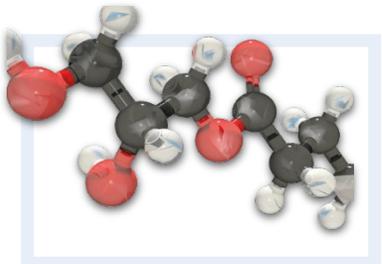
\*Lipopolysaccharides (LPS) are part of the bacterial membrane that induce inflammation in the epithelium

# BEX Villi +

**BEX Villi +** is a feed additive that brings the properties of mono- di- and triglycerides together into one unique solution that enhances villi development and controls pathogens, improving animal performance.

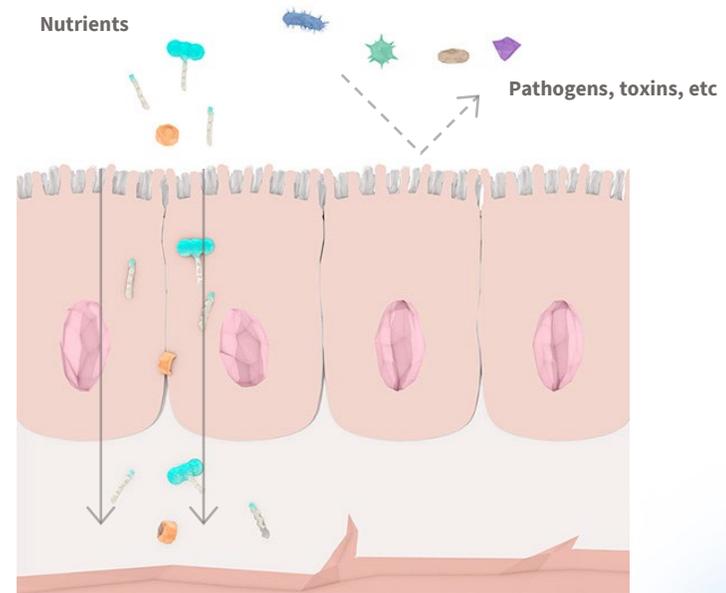
**Short chain monoglycerides** possess important antibacterial properties that don't induce bacterial resistance, thus are considered an important alternative to preventive antibiotics in feed.

**Di- and triglycerides of butyric acid** function as a delivery method for butyrate molecules to act within the small intestine, promoting gut health and a symbiotic relation between the microbiota and host.

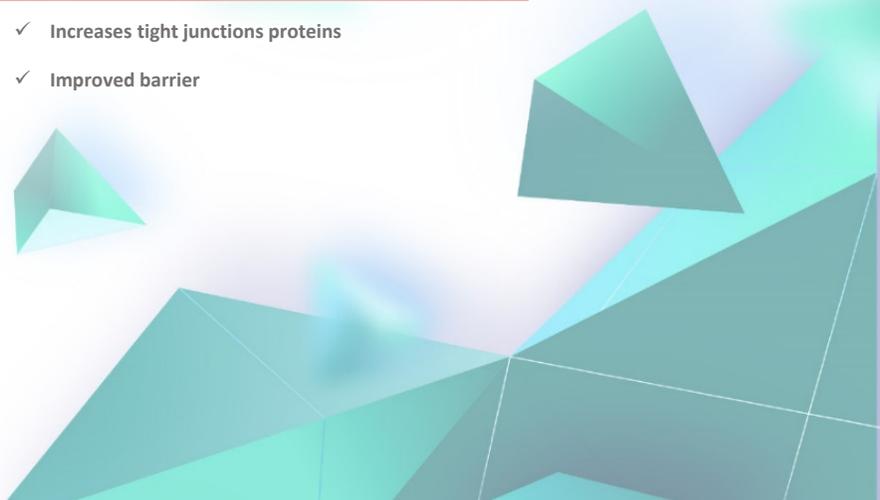


### Benefits

-  Stimulate Gut Development
-  Reduce Health Problems
-  Improve Animal Performance



- ✓ Increases tight junctions proteins
- ✓ Improved barrier





# BEX Gut Control

**BEX Gut Control** a feed additive that brings the properties of mono- di- and triglycerides together into one unique solution that enhances villi development and controls pathogens, improving animal performance.

## OPTIMAL GUT HEALTH

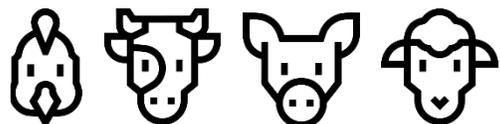
Di- and triglycerides of butyric acid function as a delivery method for butyrate molecules that act in the small intestine to promote gut health and a symbiotic relationship between the microbiota and the animal.

Di- and triglycerides of butyric acid included in **BEX Gut Control** are odorless and easy to work with.



## Benefits

- ✕ Stimulate Gut Development
- ✕ Reduce Health Problems
- ✕ Improve Animal Performance



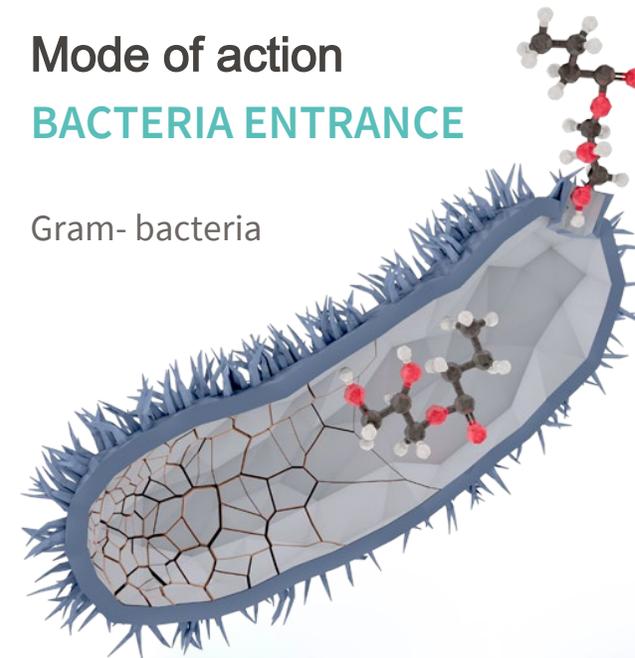
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## Mode of action

### BACTERIA ENTRANCE

Gram- bacteria



- » DNA alterations
- » Inhibition production of invading proteins



# BEX Gram-Guard liquid



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**BEX Gram-Guard Liquid** a specific formula containing short chain  $\alpha$ -monoglycerides, lactic acid and carefully selected micro-ingredients.

## $\alpha$ -MONOGLYCERIDES

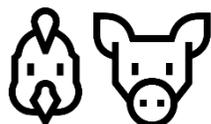
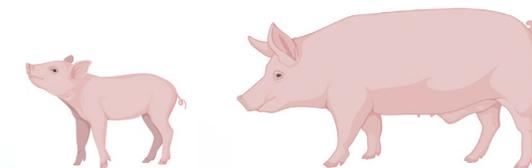
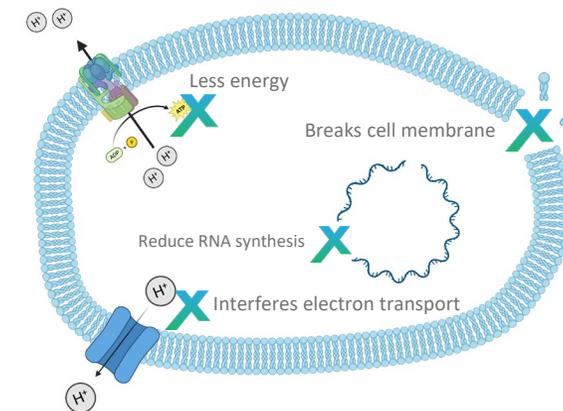
BEX Gram-Guard contains  $\alpha$ -monoglycerides of short chain fatty acids to inhibit Gram-negative pathogenic bacteria.

## LACTIC ACID

Lactic acid is a natural substance known for its beneficial effects on different enzymatic processes, feed intake and pathogen inhibiting properties.

## MICRO-INGREDIENTS

Adding a carefully selected micro-ingredients induces a synergistic effect. These micro-ingredients contribute to the animal's resilience against invading pathogens.



-  Active in entire GIT and via bloodstream
-  Inhibits Gram-negative bacteria and Clostridium
-  Reduces mortality rate
-  Improves animal performance



# BOOSTACID



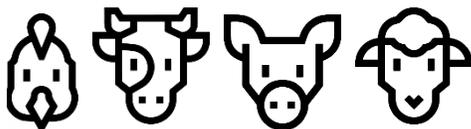
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A group of **concentrated microgranular acidifiers** and solutions improving the health of the gastrointestinal tract based on organic acids, plant extracts, glycerides of short and medium-chain fatty acids and unique blends of trace elements in chelated form.

## Benefits

- ✗ Stimulates enzyme activity
- ✗ Prevents the growth of harmful bacteria
- ✗ Improves protein digestion
- ✗ Strengthens anti-microbial activity to reduce the development of such pathogenic bacteria as E.coli, Salmonella sp.
- ✗ Improves productivity and physiological condition of animals
- ✗ Reduces the rate of diarrhea and mortality





# ACIDMIX NEO



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Unique **mixtures of organic acids** for effective pathogen control and acidifying via drinking water.

## Action

- Preserves and optimizes intestinal microflora
- Stimulates pancreatic secretion and improves digestion
- Promotes healthy fermentation in the intestines
- Reduces diarrhea

## Characteristics

- **Effective anti-inflammatory action**
- Inhibitor of Salmonella and E. coli
- **Reduction of odor and evaporation rate**
- Strong pH effect
- **High antibacterial and strong bacteriostatic effects**





# IMMUNOWALL

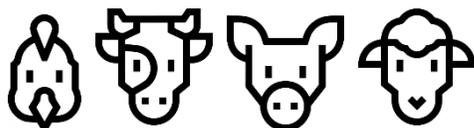
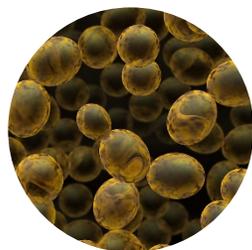


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**ImmunoWall®** prevents the colonization of the intestinal tract by pathogens, stimulates the immune activity of phagocytic cells, and enhances the action of beneficial bacteria such as lactobacillus and bifidobacterium, creating an immunological wall against diseases.

**ImmunoWall®** also has powerful mycotoxin adsorption properties. It is a premium yeast cell wall fraction, the richest source of gut resistant  $\beta$ -glucans and mannan-oligosaccharides (MOS).



## Immunomodulation

Directly interacts with the intestinal innate immune cells



## Action on pathogens

Balances the intestinal tract colonization



## Intestinal integrity

Favors the maintenance of intestinal permeability and enteric conditions



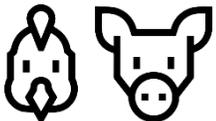
# BACTERIOPHAGES

## Phage solutions - new antibacterial tools

Bacteriophages, or phages, are viruses that infect and replicate within bacteria. Their mechanism of action involves two main life cycles: the lytic cycle and the lysogenic cycle. In the lytic cycle, phages attach to the host bacterium, inject their DNA, commandeer the bacterial machinery to replicate themselves, and ultimately lyse (burst) the cell, releasing new phages.

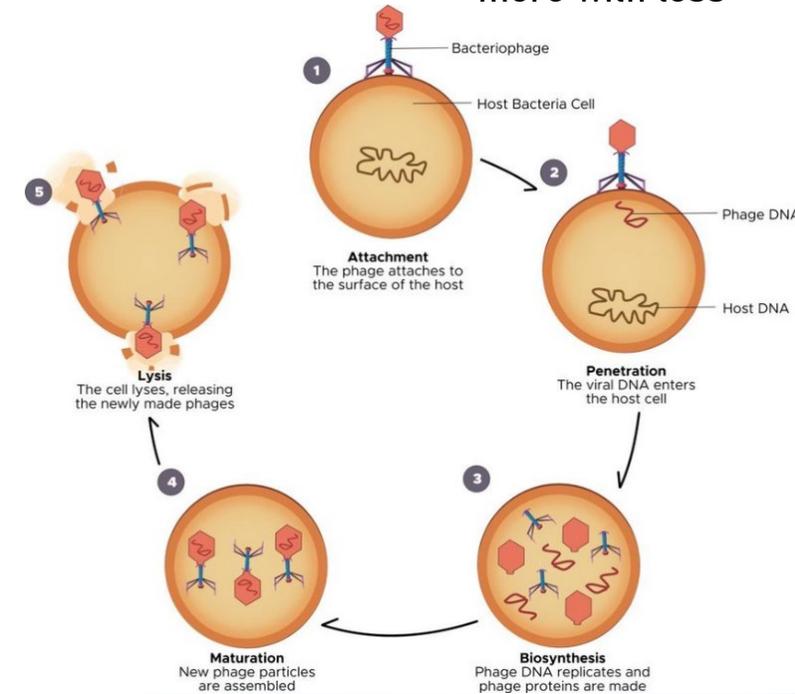
### Benefits

- Effective on multiple bacterial strains, including those resistant to antibiotics.
- Improves FCR for enhanced production performance.
- Has no negative impact on the animals' microbiome.
- Natural, non-GMO and biodegradable.
- Does not cause bacterial resistance towards antibiotics.



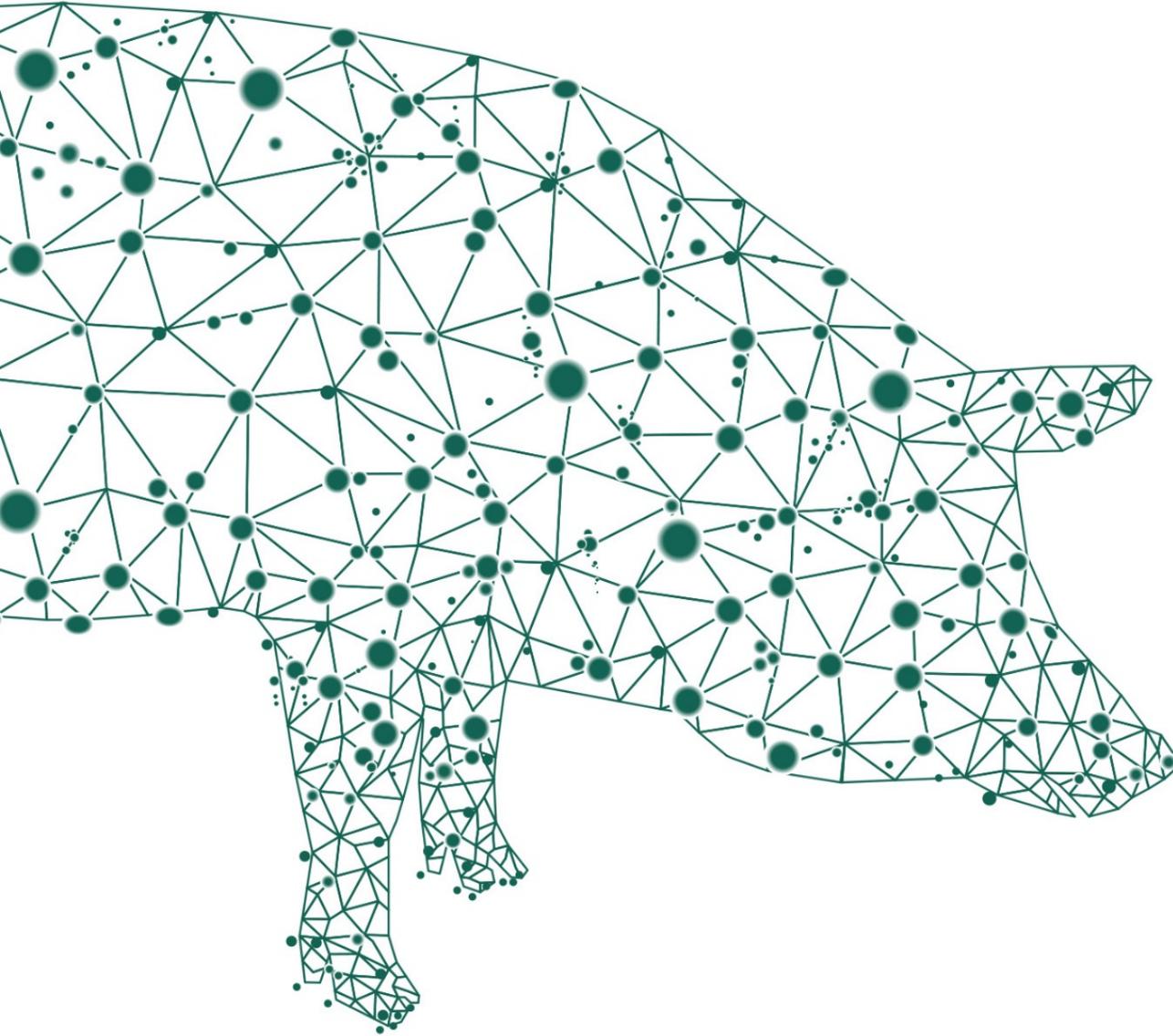
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# PHYTOGENICS





# REVTL



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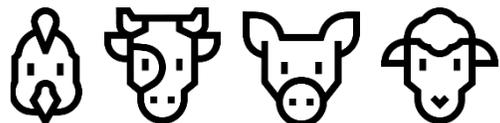
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**REVTL** is formulated on the basis of dried, milled parts of plants and contains a unique combination of botanical elements from plants with a high content of polyphenols including grapes, liquorice and rosemary, which all possess strong antioxidant properties.

**REVTL** is a natural performance enhancer that because of its high antioxidative activity has the potential to efficiently replace part of the E and C vitamins in the animals' feeds.

**REVTL** has a high content of both water- and fat-soluble polyphenols, so it possesses a high antioxidative potential. The polyphenols are present in the form of selected elements from plants that can include grapes (*Vitis vinifera*), rosemary (*Rosmarinus officinalis*), and liquorice (*Glycyrrhiza glabra*), and Quillaja (*Quillaja Saponaria*)

**REVTL** can replace vitamin E50% adsorbate at the ratio that 1 gram of REVTL replaces 2 grams of Vitamin E50% adsorbate. If replacement ratio of 1:1 is used, the replacement also has a positive effect on the performance of the animals.





# AMACT



**AGRAVIAL**  
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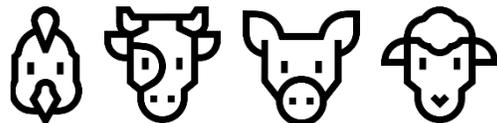
**amACT** is developed to efficiently tackle problems in pig and poultry production, like bacterial infections and poor performance due to its high content of saponins and active compounds from rosemary.

**amACT** is a broad-spectrum performance enhancer. It is a natural aromatic and taste-enhancer which pigs, poultry and ruminants find attractive.

**amACT** may advantageously be included in extruded, expanded and pelleted feeds as well as in meal feeds and wet feeds. The product is formulated as a free-flowing powder ready for use by producers of premixes, by feed-manufacturers, by home mixers and by others.

## Benefits

- ❖ Performance enhancer
- ❖ Feed intake improver
- ❖ Improve FCR efficiency
- ❖ Reduced ammonia in the air in the animals' houses





**AGRAVIAL**

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