

FEED THE POTENTIAL.

Together, we can better serve your animals, their feed, and our planet.







Improving and maintaining
animal health requires
**NEW EFFICIENCIES,
VIGILANCE, AND
INNOVATION.**

Let's work together on
preserving and protecting
ANIMAL HEALTH.



NOURISHING RELATIONSHIPS FOR A **HEALTHIER GLOBAL FOOD MARKET**

The world depends on the animal nutrition industry. By 2050, the world population is expected to reach nearly 10 billion people. As such, the **animal nutrition industry is increasingly challenged to produce more with less—responsibly, safely, and sustainably.**

Clearly, the production, well-being, and care of livestock are paramount to a healthy, global food market. At Eastman, however, we never forget that the **animal nutrition industry thrives only if the people who dedicate their lives to it thrive as well.**

That's why our animal nutrition specialists leverage scientific expertise, regulatory acumen, and a trusted supply chain to help optimize feed preservation and hygiene, promote better gut health, and ensure economic viability in the industry.



INNOVATING IN ANIMAL NUTRITION



The animal nutrition industry faces complex challenges: **persistent foodborne pathogens, climate change, global market fluctuations, and evolving legislation.** To succeed, it helps to partner with an industry leader.

At Eastman, we remain committed to **investing in people, data, chemistry, and capability improvements** to continually grow and remain a **trusted provider of sustainable feed preservation and hygiene and gut health solutions.**

Nutritionists, feed mill managers, veterinarians, and others in the animal nutrition industry can leverage our formulation expertise and decades of industry experience—steeped in scientific know-how and a collaborative approach. Together, we'll develop sustainable solutions to safeguard the quality of feed and feed raw materials, develop new feed concepts that tackle specific challenges, and improve animal resilience and productivity.



TOGETHER,
we'll develop sustainable
solutions to optimize
**ANIMAL
PERFORMANCE.**



A ROBUST PORTFOLIO

Choose from a broad and growing portfolio of proven solutions to implement in your feed programs, ensuring stable and predictable results. With global security of supply and localized expertise, we ensure that customers can optimize feed for farmers in their specific geographies.

Take advantage of the widest portfolio of organic acids available. Our nutritional products and combinations of organic acids and derivatives—together with synergetic ingredients—help create customized solutions that enhance poultry and swine performance and well-being. These solutions help improve yields and reduce costs by safeguarding overall animal health via feed and water.

Combining chemistry with animal science

Gut health



- Optimize animal performance, welfare, and resilience
- Balance microflora
- Manage immune responses and oxidative stress
- Maximize nutrient absorption
- Improve gut integrity

Feed preservation and hygiene



- Protect against molds and yeasts
- Maintain feed hygiene and bacteria control
- Ensure aerobic and anaerobic preservation and stabilization of farm-made feed for ruminants



With comprehensive in-house capabilities for blending, buffering, adsorbing on carrier, coating, and esterification, we offer customized solutions based on a full pack of short- and medium-chain fatty acids and their salts and derivatives combined with other synergetic active ingredients such as essential oils.

GBM coated and uncoated butyrate solutions are made available through a commercial partnership with Sanluc (www.sanluc.be).

For ruminant nutrition and health, Eastman offers a range of formic acid-based silage additives. Formic acid is a highly effective organic acid for pH reduction and is proven to inhibit bacterial growth. Our products enable controlled silage fermentation, which improves feed intake, milk volume, milk protein, and fat content.



Through expansion and acquisition, we are **widening our portfolio of specialty feed products**, adding new capabilities, broadening the reach of our experts' know-how, and enabling the application of new technologies to address emerging challenges.

NOTE: Although we have global manufacturing and supply chain capabilities, all products may not be available in all regions. Certain statements and claims may not be applicable in all regions. For further information, contact your Eastman Animal Nutrition representative.





PROTECTING GUT HEALTH WITH REDUCED ANTIBIOTIC USAGE

Nutritionists have a tough job—one the entire global food market depends on. Poultry farmers are faced with challenges like wet litter, heat stress, impaired footpad quality, and reduced eggshell quality. Meanwhile, those who raise swine are challenged with postweaning and digestive issues. At Eastman, we understand these challenges and are poised to create customized solutions that safeguard animal performance and well-being.

Let's tackle these challenges together.

We can address many challenges by focusing on solutions that can be tailored to your specific situation. We start by understanding your needs, unresolved issues related to antibiotic reduction, regulatory restrictions, or production goals to offer customized recommendations. For example, based on our expert nutritional and formulation know-how, we can combine different active ingredients (organic acids; mono-, di-, and triglycerides; essential oils) into one stable product that addresses your unique issues.

A healthy animal is key to maintaining performance and yield. Acidification can help manage microbial challenges and optimize nutritional efficiency through synergies with endogenous and exogenous enzymes. What's more, our solutions featuring coatings and esterification help bypass the stomach, delivering active ingredients where they're needed most—in the intestine—to support microbial balance, the gut mucosal barrier, and gut physiology.

Collaborate with Eastman to formulate solutions to get the best from your livestock. By taking full advantage of our in-house technical knowledge to guide you in the setup and development of trials, you can support animal health and welfare while optimizing performance and quality.

Gut health solutions

- Eastman Acitra™
- Eastman Protaq™
- Eastman Protural™
- Eastman Entero-Nova™
- GBM*

*GBM butyrate solutions are made available through a commercial partnership with Sanluc (www.sanluc.be).

MAINTAINING QUALITY THROUGH **FEED PRESERVATION**



Feed mill managers, feed producers, and farmers have high standards to meet in terms of preservation and hygiene. It is worthwhile to invest in the well-being of animals—as well as workers—through quality hygienic feed that is full of nutrients, is free of pathogens, contains a low number of spoiling microbes, and supports animal health and welfare. Healthy animals can fully achieve their production potential, minimizing veterinary costs.

Preserving feed and feed raw materials against molds, yeast, and microbes serves the entire value chain. Preservatives can reduce costs compared to heat treatments as well as avoid recontamination. They can also extend product shelf life. Clean, high-quality feed with low spoilage bacteria increases yields, prevents feed losses, and allows for efficient poultry, swine, and ruminant farm management.

We also offer one of the widest portfolios of organic acids available—a growing spectrum of proven solutions that ensure the safety and efficacy of your feed and prevent losses that could be caused by spoilage. Eliminating losses and ensuring optimal animal production are vital to improving sustainability in animal production.

To meet your needs and reduce bacterial load in a variety of conditions, we offer solutions ranging from basic blends to more sophisticated combinations that accommodate more complex substrates. The correct combinations of acids and bioactive compounds can create a synergy where some components will work to increase the permeability of bacterial cells for other components to enter and disrupt normal cellular function.

Our regional teams have a deep understanding of local conditions, challenges, and breeds to offer best-in-class technical support. We take a collaborative approach to provide application recommendations for specific substrates and acid recovery—offering a selection of low-odor, low-evaporating, buffered products, which is important for worker safety.

Feed preservation and hygiene solutions

- Eastman Acitra™
- Eastman Keitex™
- Eastman Propcorn™
- Eastman Stabilizer
- AIV®

Nutritional additive solutions

- Eastman Choline Chloride



MAINTAINING SUSTAINABILITY

One of the key elements to improving sustainability in animal nutrition is ensuring high material quality by protecting against yeast, mold, oxidation, incorrect fermentation, and pathogens through proper preservation.

The feed industry plays an important role in the circular economy and sustainable food production, using many by-products from the food industry such as grain, vegetable oil, potato, sugar, and fish. These by-products typically serve as excellent feed raw material due to high nutritional values and large volumes.

Together, we can help you find preservation solutions to improve the conversion of valuable feed raw materials into meat, eggs, and milk—improving sustainability in the livestock production chain.

Efficiency in feed production and animal nutrition and the well-being of animals, workers, and consumers are also key contributors to a more sustainable animal nutrition industry. At Eastman, we take safety seriously and help promote it by offering less corrosive products, well-documented quality control and assurance, and timely training on how to safely handle animal nutrition products.



A SHARED MISSION AND INNOVATIVE SPIRIT



Change is constant in the animal nutrition industry, whether it's due to evolving regulatory compliance or persistent threats to animal well-being. In an industry full of unknowns, it's good to know who you can rely on. Eastman's regional teams and technical experts adapt solutions to your local conditions, and we constantly invest in developing new technologies and innovative approaches to help you make the right decisions. Our experience in animal nutrition began in 1951 with the production of butyric acid feed additives. Through a succession of strategic acquisitions and a focused investment in technical and regulatory know-how, we now offer the widest portfolio of organic acids available, a growing offering of specialty feed additives, a rich range of complementary products, and—most importantly—opportunities to codevelop customized products.

Let our experts assist you in finding the right solution to your challenges, whether it's collaborating on concepts adapted to your needs, assistance (from protocol to the interpretation of results) in selecting winning combinations, or customized application recommendations. By combining our scientific, formulation, and manufacturing know-how with secure supply, we can offer you what you need when you need it.

In an ever-changing
INDUSTRY,
the one thing you need
in constant supply is
PARTNERSHIP.





ANIMAL NUTRITION MANUFACTURING SITES

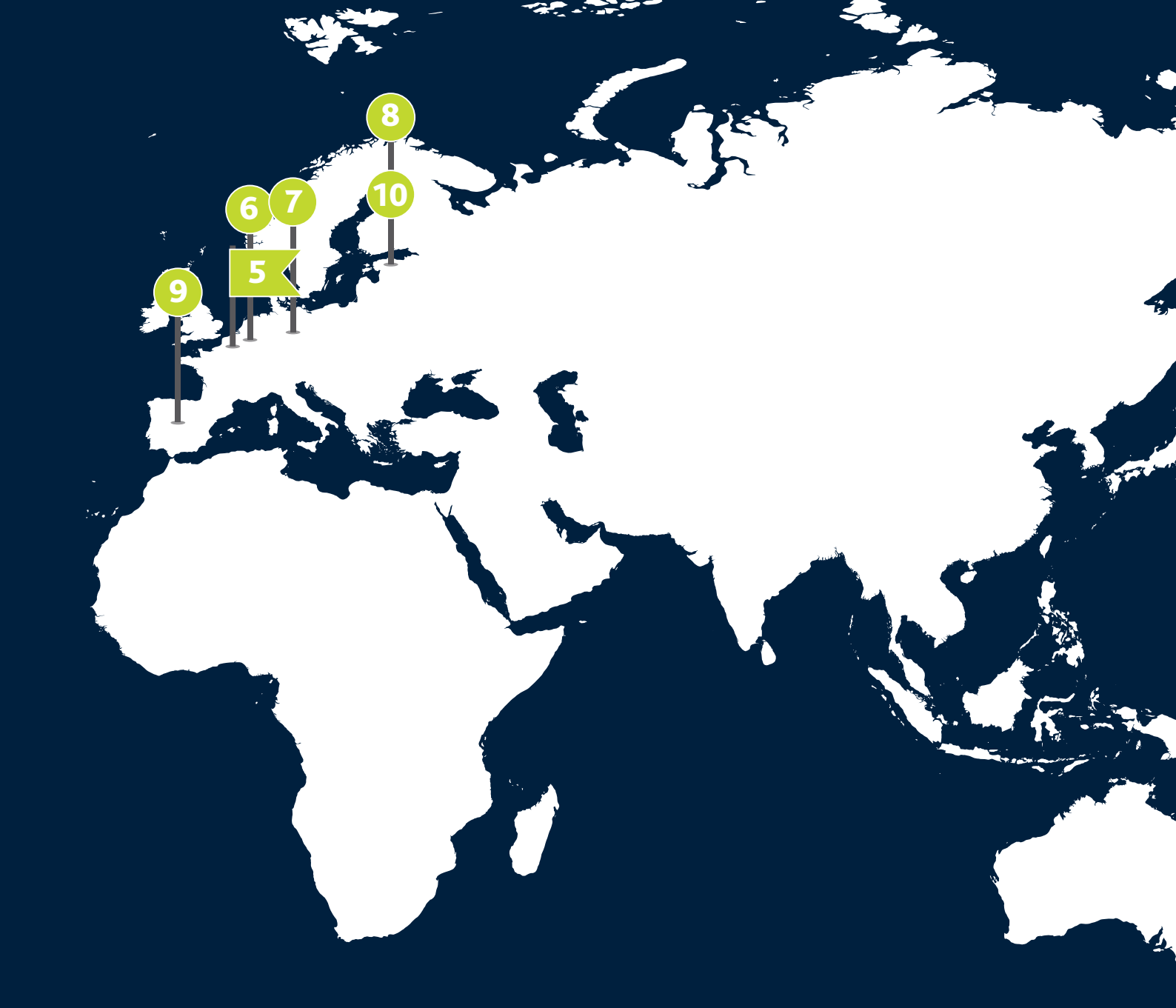
A global team with local presence

Headquartered in Kingsport, Tennessee, U.S.A., Eastman has manufacturing operations at multiple sites in North America and Europe as well as sales and technical experts located throughout North America, Latin America, Europe, China, and the Pacific Rim.

With recent expansions and acquisitions, we can offer more regional production capabilities and an enhanced ability to quickly deliver and adjust to emerging

customer requirements. While our operations are global in scope, those working in feed mill procurement and animal nutrition production rely on expert regional insight to help optimize production for specific geographies.

And because innovation is at the heart of our strategy, we are supported by advanced technology centers in Belgium and Kingsport.



NORTH AMERICAN SITES

- 1 Eastman headquarters | Kingsport, Tenn.
- 2 Propionic acid and butyric acid | Kingsport
- 3 Propionic acid | Longview, Texas
- 4 Choline chloride | St. Gabriel, La.

EUROPEAN SITES

- 5 European Technology Center | Zwijnaarde, Belgium
- 6 Choline chloride | Ghent, Belgium
- 7 Organic acid derivatives (buffering) and dry (salts) and liquid blending | Veenendaal, Terneuzen, and Someren, The Netherlands
- 8 Organic acid derivatives (buffering) and liquid blending | Oulu, Finland
- 9 Organic acid derivatives (buffering, esterification) and dry (salts and carrier) and liquid blending | Ávila, Spain
- 10 Sodium benzoate and benzoic acid | Kohtla-Järve, Estonia



LET'S TALK ABOUT **EFFECTIVE GUT HEALTH, FEED HYGIENE, AND PATHOGEN CONTROL.**

By 2050, farmers worldwide will need to produce 60%–70% more to meet growing population demands.¹ And the animal nutrition field is already challenged to produce more, comply with evolving regulations, and resist persistent threats such as *Salmonella* while reducing the use of antibiotics and growth promoters.

Meanwhile, according to the Food and Agriculture Organization of the United Nations, animal feed accounts for up to 70% of the cost of animal production.²

Success will require not only new efficiencies to control costs but vigilance and innovation to become more sustainable.

The world depends on all of us to effectively minimize the risk of pathogens in the food chain. Rely on Eastman to help protect your enterprise.



To explore how we can codevelop solutions,
contact us at [Eastman.com/AnimalNutrition](https://www.eastman.com/AnimalNutrition).

¹United Nations, "Feeding the World Sustainably,"
<https://www.un.org/en/chronicle/article/feeding-world-sustainably>

²<https://www.fao.org/3/U8750t/u8750T01.htm>



TOGETHER,
we can develop
CUSTOMIZED
SOLUTIONS
that safeguard your
ANIMALS'
WELL-BEING.

Let's talk about solutions that
work specifically for you.



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