

**ANIMAL
NUTRITION**

PRODUCT
AND SERVICE
OVERVIEW



SCIENCING THE GLOBAL
FOOD
CHALLENGE



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THE FUTURE OF LIVESTOCK PRODUCTION

BECAUSE IT'S ALL ABOUT LIFE

Ensuring food security is one of the greatest global challenges. Eight billion human lives depend on it. But how we source animal protein matters because it has consequences that affect animals, humans, and ultimately the entire planet. There is only one way to do it right: using science. Only considered, evidence-based solutions can establish and maintain a truly sustainable and secure food supply.

Sciencing the global food challenge.



BECAUSE
IT'S ALL
ABOUT **LIFE**



THE TASK:

ENSURING FOOD SECURITY FOR US ALL

Animal protein is a key part of a balanced diet for many people across the globe. Providing enough affordable animal protein for eight billion people is a challenge. An even greater challenge is how to respect the health and welfare of animals and ensure responsible use of antibiotics, while protecting our environment. How we source animal protein affects animals, humans and the planet. It affects life itself. There is only one way to do it right: using science.

Because it's about life.



BECAUSE
IT'S ALL
ABOUT **LIFE**



THE CHALLENGE:

STAYING WITHIN PLANETARY BOUNDARIES

Everything we do has an impact on our environment. How we source animal protein affects animals, humans, the entire planet. We need to do more with less to reduce our ecological footprint while ensuring food security, food safety and animal welfare. This complex set of challenges requires an holistic, scientific approach. That's why we are sciencing the global food challenges.

Because it's about life.



BECAUSE
IT'S ALL
ABOUT **LIFE**



THE OPPORTUNITY:

SCIENCING THE GLOBAL FOOD CHALLENGE.

Livestock farming affects wildlife – both directly or indirectly. Eutrophication, water and land use, as well as biodiversity are as important as animal welfare. With the help of science, we're making land use more efficient, reducing the need for deforestation and monoculture, maintaining biodiversity and reducing fertilizer and freshwater use. Our sustainable farming solutions not only enhance growth and animal health but also reduce reliance on natural resources. That's why we are scienicing the global food challenge.

Because it's about life.



*Scan the QR code
and get more information.*

AMINO ACIDS

for optimum animal nutrition

THE BUILDING BLOCKS OF LIFE: AMINO ACIDS ARE THE ESSENCE OF A HEALTHY, GROWTH-SUSTAINING DIET.

For decades, Evonik has played a pioneering role in the development and application of easy-to-handle amino acid livestock feed supplements of unsurpassed quality.

Alongside the essential methionine, we provide additional amino acids to enable perfectly balanced diets for each livestock species and growth stage.



MetAMINO®

ESSENTIAL

Ideal for ensuring an adequate supply of sulfur amino acids, particularly the essential amino acid methionine, MetAMINO® is the product of choice featuring unsurpassed purity and easy handling. As the first-limiting amino acid in commercial poultry diets, methionine is well-established in laying and broiler production. MetAMINO® has also shown excellent results in diets for piglets and growing pigs, where considerable deficiencies in methionine can occur, especially when feed is formulated to reduce nitrogen excretion for ecological reasons. Such deficiencies can be easily and cost-effectively compensated for with MetAMINO®.

Biolys®

AMINO ACIDS IN BALANCE

Biolys® is a highly effective and reliable source of lysine. It enables unsurpassed precision in balancing amino acids for pigs, poultry and aquatic species. Along with lysine, Biolys® contains nutritionally valuable biomass and energy. Moreover, Evonik has put in efforts to improve the carbon footprint of its Biolys® production leading to the lowest carbon footprint for lysine available in the market. The result: high livestock performance, improved carbon footprint and cost savings thanks to high L-lysine concentration.

ThreAMINO®

OPTIMUM PROTEIN UTILIZATION

Supplementing feed with L-threonine, an essential amino acid that cannot be formed by the animal, supports optimum protein synthesis and muscle deposition. Threonine is known to be essential for maintaining gut health and function, leading to better animal welfare and improved feed utilization. The benefit: optimum utilization of protein sources, reduced nitrogen excretion and lower feed costs.



METHIONINE FOR RUMINANTS

In ruminant nutrition, supplemental amino acids must be protected against microbial degradation in the pre-stomach rumen system. For this reason, Evonik's DL-methionine supplement Mepron® is equipped with a unique time film coating. Mepron® delivers methionine in a highly concentrated form, ensuring that the nutrient arrives in the small intestine to be absorbed.

BALANCE

THE DIET

**OPTIMUM ANIMAL
PERFORMANCE
CAN BE ACHIEVED
BY SUPPLYING
ALL AMINO
ACIDS IN THE
FEED ACCORDING
TO THE IDEAL
PROTEIN CONCEPT.**

CUSTOMER PORTAL

myAMINO

TAKE ADVANTAGE OF OUR DIGITAL PORTAL

Access our digital tools, training videos, information and documentation about our products and concepts. You can also place your orders conveniently, anywhere and anytime.

Enjoy exploring myAMINO to experience technical solutions on demand.



Visit us on myamino.evonik.com





NATURE'S TASK FORCE FOR ANIMAL HEALTH, WELL-BEING AND PERFORMANCE: Functional Feed Additives

AN INCREASING DEMAND FOR ANIMAL WELFARE AND ELIMINATING THE USE OF ANTIBIOTICS IN ANIMAL FEED LEAD TO NEW CHALLENGES FOR LIVESTOCK FARMING.

Diseases, environment and feed ingredient types can negatively impact the intestinal microbial balance in animals, leading to slower growth and reduced performance. An overgrowth of pathogenic strains of *clostridium perfringens* can result in different disorders such as diarrhea, necrotic enteritis, gangrenous dermatitis and focal duodenal necrosis. These can ultimately impair the feed efficiency, growth and wellbeing of the animals and can cause economic losses for animal farmers.

K-pron®

BOOST YOUR MILK YIELD WITH K-PRON®, THE MOST EFFECTIVE POTASSIUM SOURCE FOR DAIRY COWS.

At the onset of lactation, a cow's need for potassium increases. Various stress factors can drive up the potassium requirement even further. For example, heat leads to potassium loss through sweating. If these needs are not met, both milk yield and animal health can melt like ice in the sunshine. With K-pron®, you can simply and cost-effectively adjust the potassium content of your ration and increase milk yield, profits and animal welfare.

GuanAMINO®

IMPROVING ANIMAL ENERGY METABOLISM

GuanAMINO® is a creatine source that ensures optimal nutrient utilization and returns over feed cost. Furthermore, it spares metabolic energy and works towards an optimized amino acid metabolism.

GutCare®

FOR A HEALTHY MICROBIAL BALANCE

GutCare® is a direct-fed microbial solution based on a spore-forming *Bacillus subtilis* DSM 32315 strain with an inherent capacity to produce a variety of secondary metabolites. It supports a more balanced intestinal microbial population.

Fecinor®

FOR HEALTHY PIGLETS AFTER WEANING

Fecinor® is a feed additive which consists of a natural fast-growing *Enterococcus faecium* CECT 4515 strain. Fecinor® supports intestinal health and benefits the host due to its capacity to produce lactic acid.

GutPlus®

FOR INTENSIVE FARMING OPERATIONS

GutPlus® contains the patented Evonik strain *Bacillus subtilis* DSM 32540. GutPlus® resists the passage through the gastric tract and takes effect within the intestinal environment, where it effectively supports a balanced microbiome and contributes to growth.

Ecobiol®

STABILIZING THE GUT MICROBIOTA

Based on a natural fast-growing *Bacillus amyloliquefaciens* CECT 5940 strain, Ecobiol® can improve the gut health of the animal and help producers solve quality, profitability and sustainability challenges.

Ecobiol® Fizz

SPARKLE UP YOUR FLOCK'S MICROBIOTA – AND YOUR PROFITS WILL SHINE.

Feed changes, vaccinations, reduced feed intake – your flock faces ongoing challenges. So it's good to know Ecobiol® Fizz gives you a fast and easy way to support a naturally balanced microbiota. The soluble probiotic tablet

distributes spores homogenously in water tanks and stock solutions, without biofilm formation or clogging in water lines.

SpeoCare™

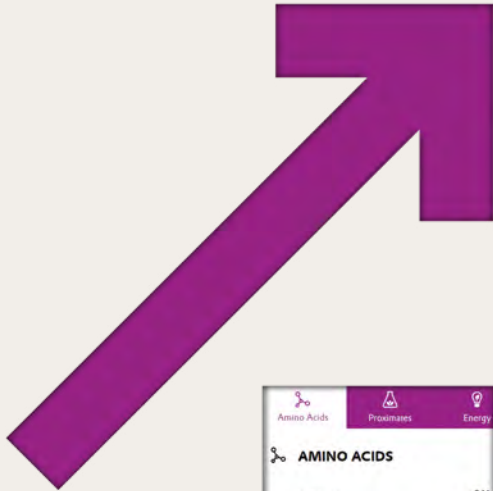
FOR IMPROVED GUT INTEGRITY

Ensuring gut integrity helps nutritionists and animal producers to maintain animal health while keeping production costs down. SpeoCare™ T60 is an innovative butyric acid product that works precisely where it is needed due to the esterification technology. Its high butyric acid content improves three key areas of animal farming: gut integrity and gut health, animal well-being and performance, and profitability by improving production efficiency.

PhytriCare®

A UNIQUE SOURCE OF FLAVONOIDS

PhytriCare® IM is a mixture of carefully selected plant extracts with a minimum content of 10% flavonoids. The plant extract selection covers several flavonoid subclasses known to affect a wide range of inflammatory pathways. A crucial consideration for breeders is making sure their animals do not develop chronic inflammation syndrome to ensure good health and maximize the animals' performance and energy efficiency. PhytriCare® IM is tasty in feed and product properties enable good digestibility and absorption of the blend with its flavonoids.



AMINO ACIDS		
Name ^		DM %
Corn		88.00
Global, 2023-2024		88.00
Corn		88.00
Argentina, 2023-2023		88.00
Corn		88.00
Australia, 2023-2023		88.00
Corn		88.00
Bangladesh, 2023-2023		88.00
Corn		88.00
Brazil, 2023-2024		88.00
Corn		88.00
Egypt, 2023-2024		88.00



SERVICES FOR EFFICIENT LIVESTOCK PRODUCTION

EVONIK OFFERS A RANGE OF TAILORED TOOLS, ANALYTICAL & HANDLING SERVICES ALLOWING YOU TO SELECT, PRECISELY FORMULATE AND PRODUCE THE OPTIMAL DIET DEPENDENT ON SPECIES AND AGE PHASE.

In addition, we provide cutting-edge whole flock DNA test solutions. This holistic portfolio is rounded off with news and information services covering the latest animal nutrition topics.

Your benefit: complete support for cost-effective, healthy and efficient livestock production.

ANALYTICAL SERVICES

NUTRITION

HANDLING SOLUTIONS

KNOWLEDGE

ANALYTICAL SERVICES

AMINONIR®

FAST, EASY AND RELIABLE

The fast and reliable analytical service AMINONIR® uses near-infrared spectroscopy (NIR) to predict nutritionally relevant parameters in more than 60 feed ingredients and finished feeds. Samples can be processed through onsite NIR equipment, preferably Bruker or FOSS, or alternatively sent to Evonik labs. It works for ground and unground ingredients. The advantages of AMINONIR® are easy sample preparation, speed and low operating costs, allowing you to carry out extensive screening programs at moderate cost.

AMINONIR® Prox

GETTING THE BASICS RIGHT

AMINONIR® Prox covers a range of crude nutrients in feed ingredients as well as finished poultry, layer, pig and fish feeds. Parameters evaluated include dry matter, crude protein, ether extract, ash, crude fiber, ADF, NDF, sugars, starch and phosphorus.

AMINONIR® NRG

ENERGY CHECK

AMINONIR® NRG allows for quick and reliable NIR predictions of important energy parameters in feed ingredients and finished feeds. Readings include gross energy, apparent metabolizable energy for poultry, digestible energy metabolizable energy and net energy for growing pigs and sows.

AMINONIR® AA

AMINO ACIDS MAKE THE DIFFERENCE

Evonik has developed specific calibrations for the prediction of essential and non-essential amino acids for all major feed ingredients, compiled in AMINONIR® AA. Amino acids are the building blocks of protein and in animal nutrition, the provided feed has to cover the animal's requirement for amino acids. With AMINONIR® AA you get all the amino acid data of your feed ingredients to optimize your feeds.

AMINONIR® FA

OPTIMIZE FATTY ACIDS FOR BETTER FEED

Fatty acid content of feed ingredients is variable and needs to be controlled to achieve precision nutrition. AMINONIR® FA is providing you the full fatty acid profile of feed ingredients and also finished feed for fish.

AMINONIR® RED

CONSIDER ANFS AND THE IMPACT OF HEAT PROCESSING

Deeper understanding of corn, distiller's dried grains with solubles (DDGS), and products of soya and rapeseed and a precise evaluation of their nutritional quality can be achieved through our unique and patented AMINONIR® RED service. It estimates the impact of heat processing and corrects the amino acid digestibilities accordingly. At the same time it checks the levels of important antinutritional factors (ANFs) like Trypsin inhibitors in Soya products and Glucosinolates and Erucic acid in rapeseed products. This enables more accurate feed formulation for more consistent livestock performance.

ANALYTICAL SERVICES



AMINONIR[®] Dairy

ALL YOU NEED FOR DAIRY NUTRITION

In nutrition of dairy cows a range of specific parameters is needed to make the best out of the available forages and to balance the ration. With AMINONIR[®] Dairy you get all the parameters of the Cornell Net Carbohydrate and Protein System (CNCPS) which enables you to formulate most efficient dairy rations based on latest scientific findings.

AMINONIR® Performance Test

TRUST IS GOOD, CONTROL IS BETTER

AMINONIR® Performance Test is Evonik's solution to check the performance of your NIR instrument in comparison to Evonik's reference NIR. You decide which instrument shall be tested at which point in time with samples that matter to your operation. The detailed performance report will give you a reliable assessment and peace of mind.

AMINONIR® Plugin

AUTOMATION TO YOUR BENEFIT

AMINONIR® Plugin is a web service interface to seamlessly connect your NIR instrument with Evonik. It cuts out all manual steps of data upload and download. Just scan a sample on your NIR instrument and AMINONIR® Plugin will take care of the rest.

AMINONIR® Inline

PROCESS CONTROL IN FEED MILLS

Accurate AMINONIR® Inline calibrations are the foundation of process control applied in feed mills together with our partner Högemann GmbH.

AMINOLab®

THE GOLD STANDARD

With AMINOLab®, you can reliably determine the total amino acid, dry matter and crude protein content in your feed ingredients and finished feeds. With analytical labs in Germany, China and Singapore we offer you unrivalled capacity when it comes to animal nutrition. At these three labs, we perform sophisticated analysis with outstanding accuracy. Using internationally recognised wet-chemistry methods, our experts evaluate samples and promptly return findings. This efficiency and reliability enables nutritionists, purchasers, quality control and livestock production managers to make informed decisions in good time.

Analytical Data Advanced

ONE ACCESS POINT FOR LAB DATA

With Analytical Data Advanced (ADA) Evonik provides you one easy to-use access point for all your proprietary lab data. This secure, web-based platform can be accessed through our customer portal. It's a highly flexible system, allowing you to configure your data for display and download according to your needs. ADA notifies you when your latest analytical results are available.

AMINOInsight®

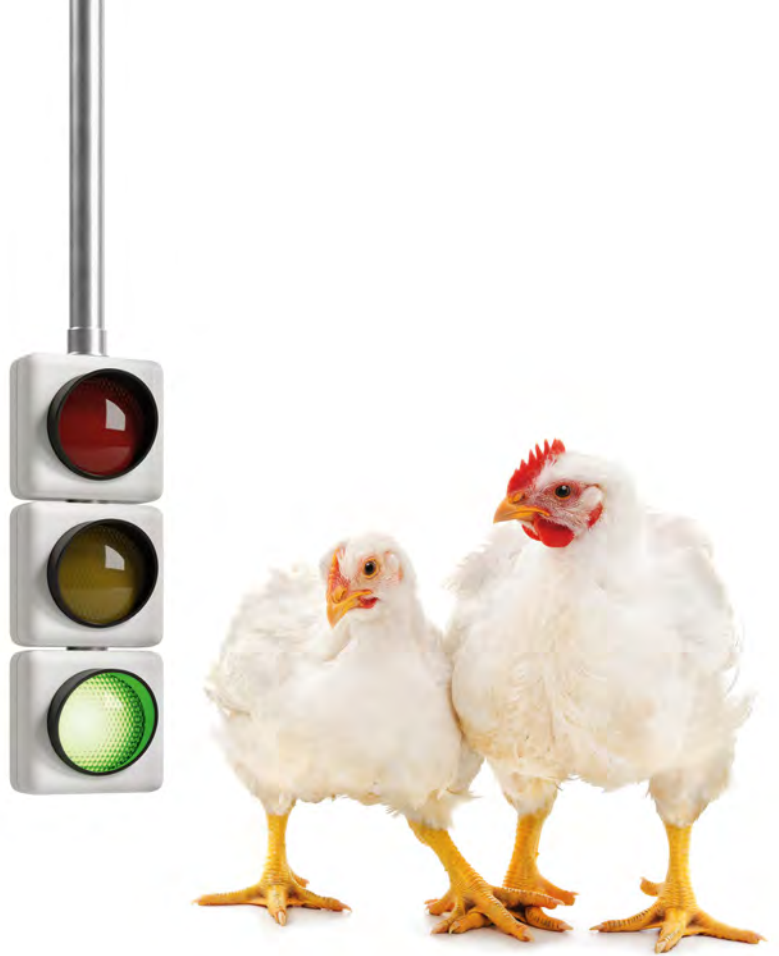
ONGOING QUALITY CONTROL

The quality of a feed ingredient can change over time or when switching suppliers. AMINOInsight® enables you to analyse and quickly identify trends and changes hidden in large datasets of feed ingredients. Feed ingredient costs are significant in feed milling and animal production, so controlling quality and evaluating sourcing options are essential to profitability.

ScreenFloX[®]

DIGITAL PATHOGEN MONITORING SOLUTION FOR POULTRY

Monitor your flocks before health and food safety issues arise: the service allows for the quantification of total DNA of *Clostridium perfringens* type G, *Salmonella enterica*, *Campylobacter jejuni*, *Eimeria* spp. (*E.tenella*, *E. acervulina*, *E. maxima*) in real time. This one-stop solution for continuous monitoring provides you the pathogen levels and progression with an early warning system to prevent disease and improve production.



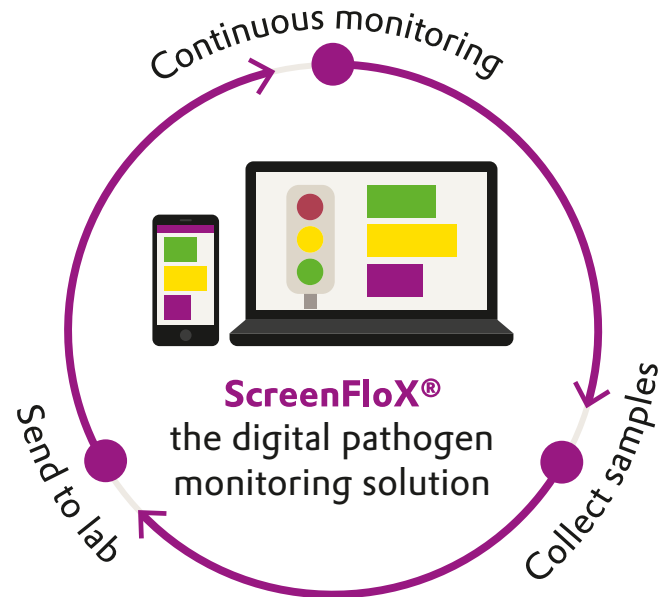
OUR DIGITAL MONITORING SOLUTION: A BETTER WAY

ScreenFloX® is a unique SMART qPCR-based digital pathogen monitoring tool, specialized for the most important gut pathogens in poultry; *Campylobacter jejuni*, *Salmonella enterica*, *Eimeria* spp., and *Clostridium perfringens*.

Part of Evonik's Specialty Nutrition portfolio, ScreenFloX® allows you to continuously monitor and quantify gastrointestinal and foodborne pathogens quickly, precisely and reliably, with an early warning system enabling you to take quick and effective preventative action.

HOW DOES IT WORK?

ScreenFloX® uses samples of faeces collected in the barn and sent to a lab for reliable qPCR analysis of your flock's pathogen status. It is the only digital pathogen monitoring solution that non-invasively quantifies pathogens from an entire poultry flock based on qPCR.



Continuously monitor the pathogen status of your poultry flocks with ScreenFloX®.

For up-to-date licensing product-specific disclaimers, see the respective handbook or user manual.
Regulatory requirements vary by country, products may not be available in your geographic area.

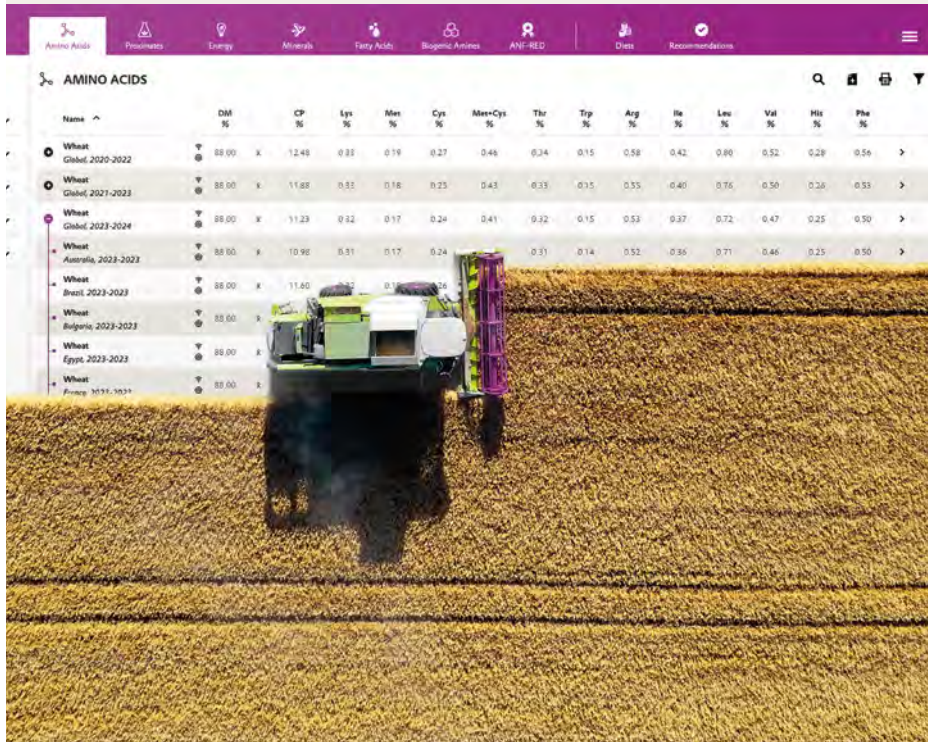
inoSust®

inoSust®, Evonik's sustainability consultancy offer, includes a complete set of assessment tools for low impact feed formulation, precision nutrition and environmental assessment using life cycle assessment (LCA), which allows the data of the operation to be converted into relevant environmental impact categories.

With these results, not only can Evonik help you evaluate the current environmental footprint of your animal production system, but help you find solutions to reduce, monitor, and report it in a science-based way.



NUTRITION



Name ^	DM %	CP %	Lys %	Met %	Cys %	Met+Cys %	Thr %	Trp %	Arg %	Ile %	Leu %	Val %	His %	Phe %
Wheat Global, 2020-2022	88.00	12.48	0.83	0.19	0.27	0.46	0.24	0.15	0.58	0.42	0.80	0.52	0.29	0.56
Wheat Global, 2021-2023	88.00	11.88	0.82	0.18	0.25	0.43	0.33	0.15	0.55	0.40	0.76	0.50	0.26	0.53
Wheat Global, 2023-2024	88.00	11.23	0.82	0.17	0.24	0.41	0.32	0.15	0.53	0.37	0.72	0.47	0.25	0.50
Wheat Australia, 2023-2023	88.00	10.96	0.81	0.17	0.24	0.41	0.31	0.14	0.52	0.36	0.71	0.46	0.25	0.50
Wheat Brazil, 2023-2023	88.00	11.80	0.82	0.18	0.26	0.44	0.31	0.14	0.52	0.36	0.71	0.46	0.25	0.50
Wheat Belgium, 2023-2023	85.00	11.80	0.82	0.18	0.26	0.44	0.31	0.14	0.52	0.36	0.71	0.46	0.25	0.50
Wheat Egypt, 2023-2023	88.00	11.80	0.82	0.18	0.26	0.44	0.31	0.14	0.52	0.36	0.71	0.46	0.25	0.50
Wheat France, 2023-2023	85.00	11.80	0.82	0.18	0.26	0.44	0.31	0.14	0.52	0.36	0.71	0.46	0.25	0.50

AMINODat®

OUR EXTENSIVE WEB-BASED DATABASE FOR ANIMAL NUTRITIONISTS

AMINODat® is the most comprehensive animal nutrition database in the world. It is continuously enlarged and updated once per year to ensure that it represents the feed ingredient qualities you work with. It supports you in mastering the challenge of reducing costs while meeting livestock needs. Find out what AMINODat® can do for you.

AMINOPig®

FEED RECOMMENDATIONS FOR GROWING PIGS

The software tool AMINOPig® provides amino acid and energy recommendations for growing pigs. It enables you to simulate your particular production conditions by selecting the genetic lean gain, sex and body weight of the pigs and the dietary net energy (NE) content.

AMINOCow®

DAIRY RATION EVALUATION

An easy-to-use and powerful tool for dairy cow ration formulation and evaluation, AMINOCow® supports amino acid balancing with Mepron®, the rumen protected methionine.

AMINO Aqua®

AQUACULTURE SOFTWARE (CARP, SALMONID, SHRIMP, TILAPIA)

Four targeted software tools for quick and easy amino acid recommendations. By simulating production scenarios based on various operation-specific features, the tools allow you to optimize your feed mix for cost-effective production of different aquatic species.

HANDLING SOLUTIONS



AMINOSys®

FULLY AUTOMATED HIGH- PRECISION DOSING AND CONVEYING

Our AMINOSys® service stands for state-of-the-art dosing equipment. We offer flexible and highly efficient solutions to support trouble-free storage, dosing and conveying of micro-ingredients. Thanks to digitalization, our fully automated and integrated solutions allow remote error detection, rapid troubleshooting and regular checks of maintenance status.

AMINOTrac®

VENDOR MANAGED INVENTORY

To ensure efficient replenishment of Evonik feed additives, we provide AMINOTrac® – the Evonik service for vendor managed inventory and optimization and replenishment. Filling levels of silos are remotely monitored. Based on forecast scenarios, optimal replenishment is scheduled and alerts are triggered to ensure timely call-off or deliveries.

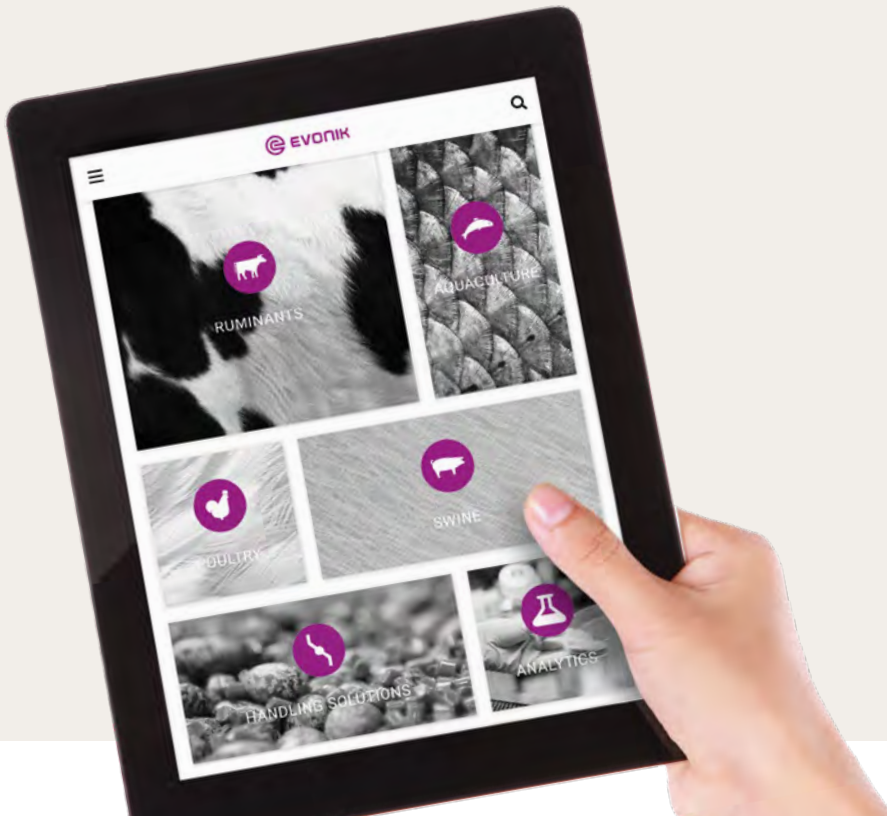
THE LATEST KNOWLEDGE

AMINO*News*[®]

STAY UP TO DATE

AMINO*News*[®] translates scientific data and experience into practical solutions, providing updates on nutritional topics for the feed industry, integrated livestock and poultry operations, consultants and universities.

The content is specifically selected to support decision-making processes in livestock and feed-milling operations. AMINO*News*[®] is available on Google and Apple app stores, as well as on our website.



Facts&Figures

APPLIED SCIENCE, PRACTICAL INSIGHTS

Our *Facts&Figures* (scientific papers) reveal information on trial results, executive summaries on scientific findings and discussions on nutritional and feeding trends.

SOCIAL MEDIA

Follow us on LinkedIn and Instagram and visit us online:
Evonik Animal Nutrition



THE RIGHT SUPPORT for your needs

Whether you run a feed mill or livestock operation, produce meat, dairy products, eggs, fish or shrimp, Evonik provides essential support. Let's talk about what our targeted feed additives, software tools, services and experience can do to take your business to the next level – and set you apart from competitors.

EVONIK OPERATIONS GMBH

NUTRITION & CARE

ANIMAL NUTRITION BUSINESS LINE

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evonik.com/animal-nutrition

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05/2024