EU admits: Regulatory burden is a brake on Europe’s competitiveness. Changes expected for sustainability regulations

*by **Ilinca Anghelescu**, Global Director Marketing and Communications*

In a rare move that betrays urgent concerns, the EU is moving to address its economic weaknesses and close competitiveness gaps. Among the targeted changes are burdensome Sustainability regulations.

The release of the European Commission’s “Competitiveness Compass” last week aims to “urgently tackle longstanding barriers and structural weaknesses”, which, the Commission admits, are caused in part by heavy regulatory burdens. One point addressed is “closing the innovation gap”, i.e. investing in AI and digital infrastructure and removing heavy administrative obligations that hinder fast innovation. Another proposal is to diversify dependencies and increase security, in terms of defense and preparedness as well as security in front of climate change threats.

However, of particular importance to agriculture is the list of “horizontal enablers”, i.e. actions to be taken soon that reduce the regulatory burden for farmers and food producers. Policies will thus be recalibrated to balance productivity with environmental goals, particularly under the green and digital transitions. The EU

plans to release an “omnibus” package by the end of February, suggesting rolling back or reframing some of the key regulations and policies. Especially under the lens are the Corporate Sustainability Reporting Directive and the Corporate Sustainability Due Diligence Directive. These were about to receive implementation deadlines at the end of 2025 and 2026, compelling companies to take specific steps to curb and/or offset contributions to climate change.

See below the areas highlighted for change in the EC’s Compass.

Streamlining sustainability regulations for agriculture

One major focus is **simplifying the regulatory environment** to support farmers’ ability to adopt eco-friendly practices without facing administrative overload. Key initiatives include:

- **Reducing excessive administrative processes** linked to sustainability reporting, thereby making it easier for small and medium-sized farmers to participate in carbon reduction or biodiversity schemes.
- **Encouraging voluntary measures** rather than mandatory requirements where possible, ensuring that sustainability practices can be phased in gradually with adequate support.

Scaling back costs through regulatory flexibility

Proportional application of environmental rules: Regulations will be tailored based on farm size and production type, alleviating the burden on small farms and cooperatives. For instance:

- Farms participating in carbon farming or agroforestry will benefit from **simplified eligibility criteria** and streamlined evaluation processes.
- **Less frequent monitoring and audits** are proposed for farms demonstrating long-term sustainability commitments.

Additionally, digital compliance tools will play a role in reducing paperwork. Farmers can use online platforms to track and report environmental performance, cutting costs related to inspections and administrative filings.

Sustainable practices supported by innovation incentives

Rather than relying solely on regulations, the EU plans to incentivize eco-friendly practices through funding mechanisms and access to innovation:

- The **Common Agricultural Policy (CAP)** will expand its financing options for farms transitioning to organic methods, renewable energy usage, or improved nutrient recycling systems.
- **Green technology access:** Subsidized programs will help farmers adopt technologies like precision irrigation and AI-driven crop management, reducing both environmental impact and operational costs.

Integration of environmental goals without compromising competitiveness

The policy framework emphasizes that **climate-neutral agriculture** must remain productivity-focused. Key mechanisms for achieving this balance include:

- **Carbon offset programs** allowing farmers to generate income by implementing carbon-sequestering practices such as cover cropping and reduced tillage.
- **Support for sustainable fertilizer alternatives:** The EU aims to cut synthetic fertilizer use while promoting domestic production of bio-fertilizers to avoid dependency on imports.

Striking a balance between economics and environmental concerns

By reducing administrative burdens, offering financial incentives, and prioritizing flexibility, the EU attempts to achieve sustainability without hindering productivity. However, according to The Wall Street Journal, some groups – either investors or large companies – have already protested the proposed changes. These are the groups that have made massive internal changes to prepare for the Corporate Sustainability Reporting Directive and the Corporate Sustainability Due Diligence Directive, and who made them an important part of their reporting and positioning.

The omnibus package is due at the end of February, after which it will have to undergo several rounds of reviews and approvals before becoming effective in any way. It remains to be seen if the heavy administrative apparatus of the Commission is able to put these changes in motion with the same urgency that the Compass indicates.

Start right with your piglet nutrition

Conference Report

“A good start is half the battle” can be said if we talk about piglet rearing. For this promising start, piglets must eat solid feed as soon as possible to be prepared for weaning. Dr. Jan Fledderus, Product Manager and Consultant at the S&C team at Schothorst Feed Research, shows some nutritional measures that can be taken to keep piglets healthy and facilitate the critical phase of weaning.

Higher number of low-birth-weight pigs in larger litters

Litter size affects piglet quality. Larger litter sizes from hyperprolific sows often result in higher within-litter variation in birth weights. This variability can lead to a higher proportion of low-birth-weight piglets, which are more susceptible to health issues and have lower survival rates. Additionally, low birthweight pigs have an increased risk of mortality, and an improvement in birth weight from 1kg to 1.8 kg can result in 10 kg more body weight at slaughter.

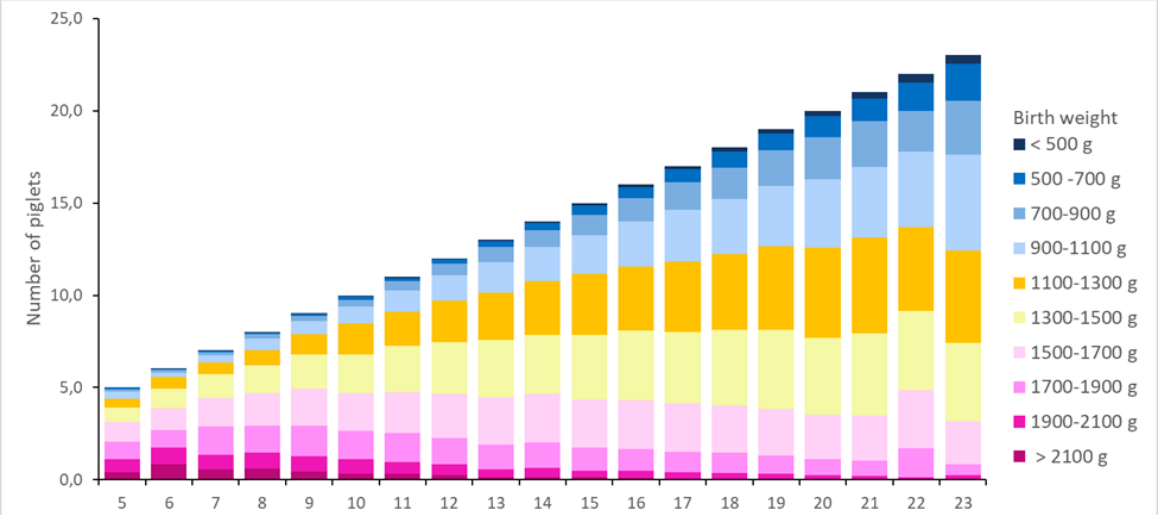


Figure 1: Effect of litter size on birth weight distribution (Schothorst Feed Research Data were collected from 2011 to 2020, based on 114,984 piglets born alive from 7,952 litters).

Implementing management practices for low-birth-weight pigs, such as split suckling, can significantly enhance nutrient intake, support immune function, and ultimately contribute to better survival rates and overall health for these vulnerable piglets.

Weaning age determines intake of creep feed

Pigs that consume creep feed before weaning restart faster to eat, have a higher feed intake, and less diarrhea after weaning. For instance, in a field trial, pigs that consumed feed 10 days before weaning had a 62% incidence of diarrhea, whereas in pigs that consumed feed only 3 days pre-weaning, diarrhea incidence increased to 86%.

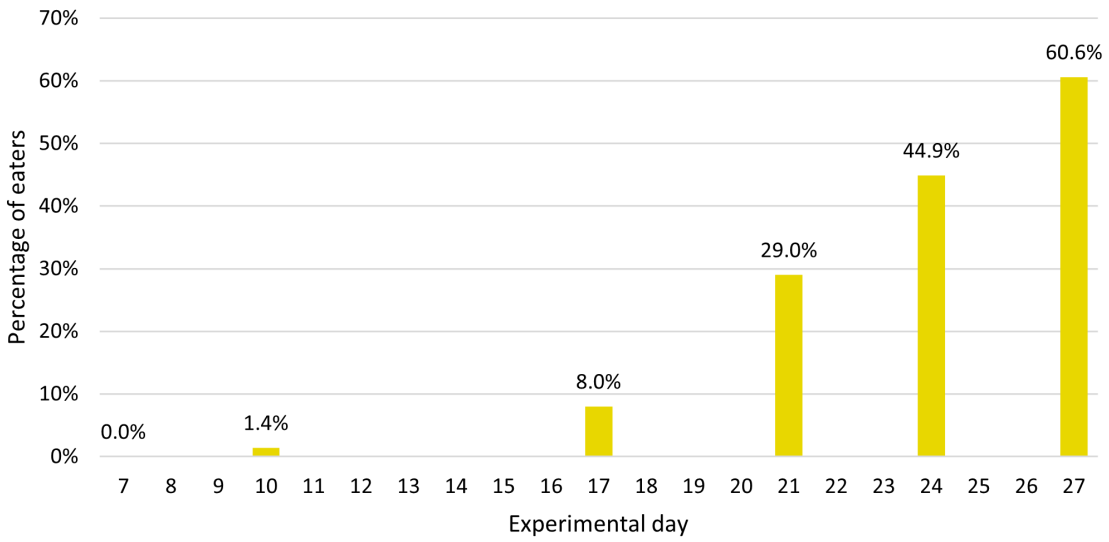


Figure 2: Influence of age on the percentage of pigs consuming creep feed

“As age is the most critical factor for a high percentage of pigs eating before weaning, there is a trend in the EU to increase the weaning age, where some farmers go to 35 days,” remarked Dr. Fledderus.

Furthermore, weaning age is positively correlated with weaning weight. Every day older at weaning improves post-weaning performance and reduces health problems.

Feed management

Creep feed for 7-10 days pre-weaning is essential, not to increase total feed intake, but to train the piglet to eat solid feed to avoid the 'post-weaning dip.' After about 15 days of age, piglets can consume more than is provided by milk alone. Dr. Fledderus strongly recommended creep feeding for at least one week before weaning. "Consuming feed before weaning will result in fewer problems with post-weaning diarrhea," he said.

In addition to creep feeding, a transition diet, from 7 days pre- and 7 days post-weaning, is advised. The composition or form of the transition diet should not be changed.

The key objective of post-weaning diets is to achieve a pH of 2-3.5 in the distal stomach. Pepsin, the primary enzyme responsible for protein digestion, is activated at a pH of around 2.0. Its activity declines significantly at a pH above 3.5, which can lead to poor protein digestion and nutrient absorption.

Fiber as a functional ingredient

Fiber was previously considered a nutritional burden or diluent, but now it is regarded as a functional ingredient. Including dietary fiber, mainly inert fiber such as rice or wheat brans, can increase the retention time of the digesta in the stomach. This extended retention allows for more prolonged contact between digestive enzymes and nutrients, facilitating improved digestion and absorption of proteins and other nutrients. Not only is pH reduced, but because more proteins are hydrolyzed to peptides, there is less undigested protein as a substrate for the growth of pathogenic bacteria and the production of toxic metabolites in the hindgut.

"Size of fiber particles also matters," said Dr. Fledderus. Coarse wheat bran particles (1,088 µm) have been shown to be more effective than finer particles (445 µm) in reducing E. coli levels in the gut. The larger particle size helps prevent E. coli from binding to the intestinal epithelium, allowing these bacteria to be excreted rather than colonizing the gut.

The understanding of dietary fiber's role in pig nutrition has evolved, with recent findings indicating that fiber can actually increase feed intake in piglets, contrary to earlier beliefs that it might decrease intake. High-fiber diets often increase feed intake as pigs compensate for lower energy density. This can help maintain growth rates when formulated correctly.

EW Nutrition's Swine Academy took place in Ho Chi Minh City and Bangkok in October 2024. Dr. Jan Fledderus, Product Manager and Consultant at the S&C team at Schothorst Feed Research, one of the founders of the Advanced Feed Package and with a strong focus on continuously improving the price/quality ratio of the diets for a competitive pig sector, was a reputable guest speaker in these events.

Nutritional strategies to maximize the health and productivity of

sows

Conference Report

During lactation, the focus should be on maximizing milk production to promote litter growth while reducing weight loss of the sow, stated Dr. Jan Fledderus during the recent EW Nutrition Swine Academies in Ho Chi Minh City and Bangkok. A high body weight loss during lactation negatively affects the sow's performance in the next cycle and impairs her longevity.

Milk production – 'push' or 'pull'?

"Is a sow's milk production driven by "push" – the sow is primarily responsible for milk production, or "pull" – suckling stimulates the sow to produce milk?" asked Dr. Jan Fledderus at the beginning of his presentation. The answer is that it is primarily a pull mechanism: piglets that suckle effectively and frequently can activate all compartments of the udder, leading to increased milk production. Therefore, the focus should be optimizing piglet suckling behavior (pull) to enhance milk production. This highlights the importance of piglet vitality and access to the udder in maximizing milk yield."

Modern sows are lean

Modern sows have been genetically selected for increased growth rates and leanness, which alters their body composition. This makes traditional body condition scoring (BCS) methods, which rely on subjective visual assessment and palpation of backfat thickness, less effective. This may not accurately represent a sow's true condition, especially in leaner breeds where muscle mass is more prominent than fat. Technology, such as ultrasound measurements of backfat and loin muscle depth, provide more accurate assessments of body condition and can help quantify metabolic reserves more effectively than visual

scoring.

Due to their increased lean body mass, we must consider adjusted requirements for amino acids, energy, digestible phosphorus, and calcium. Their dietary crude protein and amino acid requirements have increased drastically.

Importance of high feed intake for milk production

Sows typically catabolize body fat and protein to meet the demands of milk production. Adequate feed intake helps reduce this catabolism, allowing sows to maintain body condition while supporting their piglets' nutritional needs.

Feeding about 2.5kg on the day of farrowing ensures that sows receive adequate energy to support the farrowing process and subsequent milk production. Sows that are well-fed before farrowing tend to have shorter farrowing durations due to better energy availability during labor.

A short interval between the last feed and the onset of farrowing (□3 hours) has been shown to significantly reduce the probability of both assisted farrowing and stillbirths without increasing the risk of constipation. To enhance total feed intake, feeding lactating sows at least three times a day is helpful.

Dr. Fledderus recommended a gradual increase in feed intake during lactation, then from day 12 of lactation to weaning, feeding 1% of sow's bodyweight at farrowing + 0.5 kg/piglet. For example, for a 220kg sow with 12 piglets:

$$(220 \text{ kg} \times 0.01) + (12 \times 0.5 \text{ kg}) = 2.2 + 6 = 8.2 \text{ kg total daily feed intake}$$

Energy source – starch versus fat

The choice between starch and fat as an energy source in sow diets has substantial implications for body composition and milk production.

Starch digestion leads to glucose release, stimulating insulin secretion from the pancreas. Insulin is essential for glucose uptake and utilization by tissues. Enhanced insulin response can help manage body weight loss by promoting nutrient storage and reducing the mobilization of the sow's body reserves.

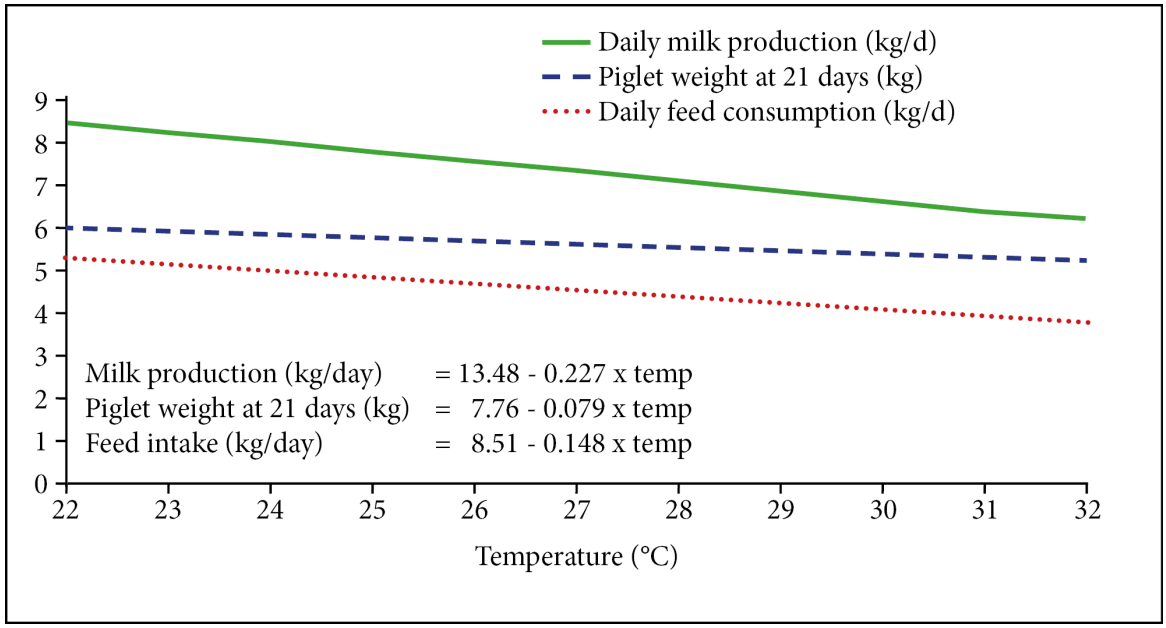
Sows fed diets with a higher fat supplementation had an increased milk fat, which is crucial for the growth and development of piglets.

Table 1: Effect of energy source (starch vs. fat) on sows' body composition and milk yield (Schothorst Feed Research)

	Diet 1	Diet 2	Diet 3
Energy value (kcal/kg)	2,290	2,290	2,290
Starch (g/kg)	300	340	380
Fat (g/kg)	80	68	55
Feed intake (kg/day)	6.7	6.7	6.8
Weight loss (kg)	15	11	10
Weight loss (kg)	3.1	2.7	2.3
Milk fat (%)	7.5	7.2	7.0
Milk fat (%)	260	280	270

Heat stress impacts performance

The optimum temperature for lactating sows is 18°C. A meta-analysis concluded that each 1°C above the thermal comfort range (from 15° to 25°C) leads to a decrease in sows' feed intake and milk production and weaning weight of piglets, as shown below.



Effect of heat stress on lactating sows (according to Ribeiro et. al., 2018 Based on 2,222 lactating sows, the duration of lactation was corrected to 21 days)

To mitigate the effects of heat stress, which reduces feed intake, it is beneficial to schedule feeding during cooler times of the day. This strategy helps maintain appetite and ensures that sows consume sufficient nutrients for milk production. Continuous access to cool, clean water can also enhance feed consumption.

Pigs produce much heat, which must be "excreted". Increased respiratory rate (>50 breaths/minute) has been shown to be an efficient parameter for evaluating the intensity of heat stress in lactating sows.

When sows resort to panting as a mechanism to dissipate heat, this rapid breathing increases the loss of carbon dioxide, resulting in respiratory alkalosis. To prevent a rise in blood pH level, HCO_3 is excreted via urine, and positively charged minerals (calcium, phosphorous, magnesium, and potassium) are needed to facilitate this excretion. However, these minerals are crucial for various physiological functions. As their loss can lead to deficiencies that affect overall health and productivity, this mineral loss must be compensated for.

Implications for management

Implementing effective nutritional strategies together with robust management practices is crucial for maximizing the health and productivity of sows. The priority is to stimulate the sow to eat more. This not only enhances milk production and litter growth but also supports the overall well-being of the sow. Regularly assessing sow performance metrics – such as body condition score, feed intake, and litter growth – can help identify areas for improvement in nutritional management.

EW Nutrition's Swine Academy took place in Ho Chi Minh City and Bangkok in October 2024. Dr. Jan Fledderus, Product Manager and Consultant at the S&C team at Schothorst Feed Research, with a strong focus on continuously improving the price/quality ratio of the diets for a competitive pig sector and one of the founders of the Advanced Feed Package, was a reputable guest speaker in these events.

Health management of nursery piglets through nutrition

Conference Report

An optimized gut function is essential for pigs' overall health and performance. When managed correctly, gut health can significantly enhance growth, immunity, and productivity. However, if gut health is compromised, it can lead to lifetime negative impacts on a pig's performance.

Early feed intake enhances GIT development

Dr. Edwards emphasized that good health and performance in the nursery are closely linked to maintaining feed intake, which is essential for developing stomach capacity and function. A larger stomach capacity increases the exposure to digestive enzymes and prolongs stomach dwell time.

Acid output takes time to develop and develops in response to substrate. It directly influences stomach pH and is closely related to pepsin output, which, on its part, influences protein digestibility and the risk of diarrhea.

Protein and immunity

Protein is a double-edged sword, warned Dr. Edwards:

- Excess or undigested protein can create inflammation and oxidative stress in the body. This occurs when the metabolism of surplus protein leads to the production of reactive oxygen species (ROS), which can damage cells and tissues, further exacerbating inflammatory responses. Chronic inflammation may impair immune responses, making pigs more susceptible to infections and diseases.
- On the other hand, a deficiency in amino acids can limit immune response. Amino acids do more than build muscle – they are critical for synthesizing antibodies and other immune-related proteins. Without adequate levels, pigs may struggle to mount effective immune responses, increasing their vulnerability to pathogens.

Table 1: Effects of amino acids on pig gut health and functions (Yang & Liao, 2019)

Amino acid	Functions
Glutamine/glutamate	• Metabolic fuel for rapidly dividing cells, including lymphocytes, enterocytes • maintains or enhances villus height/crypt depth • enhances microbial diversity • is utilized to synthesize GSH and protect against oxidative stress • stimulates both innate and adaptive immunity
Arginine	• promotes intestinal healing and reverses intestinal dysfunction • has anti-inflammatory effects
Cysteine	• is utilized to synthesize GSH (antioxidant) • utilized to synthesize taurine (antioxidant/cell membrane stabilizer) • utilized for mucin synthesis (physical protection)
Threonine	• utilized for mucin synthesis • important component of immunoglobulins • enhances microbial diversity
Glycine	• anti-inflammatory effects • utilized to synthesize GSH (antioxidant)
Methionine	• acts as an antioxidant by protecting other proteins against oxidative damage • important for the proliferation of lymphocytes

Diets should be formulated to all ten essential amino acids (arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine) while ensuring a ratio of about 50:50 for essential amino acids to non-essential amino acids is optimal for nitrogen retention and utilization in pigs.

During immune challenges, the pig's amino acid requirements, including methionine, cysteine, tryptophan, threonine, and glutamine, increase relative to lysine. Well-known examples are threonine, a key component of mucin (and immunoglobulins), supporting gut health and integrity during stress, and glutamine, a major energy source for rapidly dividing cells in the immune system.

Microbiome evolution and modulation

The microbiota of the pig evolves from birth up to about 20 weeks of age. The alpha diversity (the number of species) and species richness increase with age. The pig microbiome consists of both permanent members that establish stable populations throughout life and transient members that may fluctuate based on dietary changes or environmental factors.

Microbiome modulation through the diet

Diet can influence the rate and maturity of microbiota evolution. For instance, diets rich in fiber and specific carbohydrates can promote the growth of beneficial bacteria such as *Lactobacillus* and

Bifidobacterium. In contrast, diets high in protein can increase potentially harmful bacteria if not appropriately balanced.

Understanding these dynamics is critical for optimizing nutrition strategies that support gut health and overall performance in pigs. Proper management of dietary components can lead to healthier microbiomes, enhancing nutrient absorption and immune responses throughout the pig's life.

The following strategies accelerate the maturation of the microbiome, the gut, and the immune system:

- Promoting and maintaining feed intake: consistent feed intake is crucial for microbial development. Early access to solid feed helps establish a diverse microbiome.
- Raw material continuity: variability in feed composition can disrupt microbial communities, leading to dysbiosis. A step-wise approach to diet changes, with a broad range of ingredients at low inclusion levels, is recommended.
- Regulating digest transit time: the rate at which digesta moves through the gastrointestinal tract affects nutrient absorption and microbial colonization. Strategies to optimize transit time, such as increasing particle size and incorporating insoluble fibers, can enhance nutrient digestibility and promote a healthy microbiome by allowing beneficial microbes to thrive.
- Feeder access: adequate access to feeders encourages regular feeding behavior, supporting consistent nutrient intake and microbial activity. Frequent feeding can help maintain stable gut conditions conducive to microbial growth.
- Inert fiber: helps maintain gut motility and provides substrates for beneficial bacteria, contributing to a balanced microbiome.
- Minimizing stress: stress can negatively impact gut integrity and microbial balance, increasing susceptibility to infections and other health issues.
- Limiting the use of antibiotics helps preserve the natural gut microbiota, which is essential for maintaining health and preventing disease. The use of antibiotics can lead to dysbiosis, making pigs more vulnerable to infections and impairing immune responses.

Limitations in the use of AGPs, Zn, and Cu require rethinking in pig nutrition

Reduced access to in-feed antibiotics and pharmacological levels of zinc and copper have exposed nutritional shortcomings for nursery pigs. Preventive strategies through nutrition, carefully designed diets, and optimal use of eubiotics and functional ingredients are the keys to getting pigs off to a healthy and efficient start.

Nursery nutrition programs should be designed for long-term gut health, efficiency, and functionality. The level of investment will depend on the weaning age/weight, health status, labor quality, etc., noted Dr. Edwards.

EW Nutrition's Swine Academy took place in Ho Chi Minh City and Bangkok in October 2024. Dr. Megan Edwards, an Australian animal nutrition consultant with global research and praxis experience and a keen interest in immuno-nutrition and functional nutrients, was an esteemed guest speaker at this event.

Rearing pigs without antibiotics

Conference Report

Holistic management is essential for successfully rearing pigs, particularly in systems that aim to minimize antibiotics. The method emphasizes the interconnectedness of various factors contributing to sustainable pig health and productivity. Some of the key components of this holistic management were discussed by Dr. Seksom.

Sow lifetime productivity

Suggested targets for sow lifetime productivity are

- >70 marketed fattening pigs
- At least 6 parities with at least 10.5 pigs marketed per parity
- 25 fattening pigs/sow/year (2.4 parities/year x 10.5 fattening pigs)

To achieve these targets, we need 29.2 born alive piglets/sow/year (or 12.2 born alive piglets/parity), and it is essential to control losses during each production period: <10% pre-weaning, <3% during nursery, and <2% in fattening.

Since the occurrence of African swine fever (ASF), with improved genetics, we can now produce pigs with 120 kg+ bodyweight at slaughter without carcass problems and reach about 3 tons of bodyweight/sow/year, compared to around 2 tons before.

Modern pig genetics and subsequent

problems

Despite the advancements in modern pig genetics leading to improved production and bigger litters, several ensuing problems have emerged:

- Less average body weight of piglets at birth
- Large number of piglets born with less than 1.0 kg (target <5%)
- High pre-weaning mortality
- High post-weaning mortality and morbidity

Dr. Seksom highlighted that birthweights decrease with increasing sow prolificacy. He stated that “piglets should be divided into groups with similar body weights at weaning” and that “a key objective for successful weaning is a piglet that weighs a minimum of 6-6.5 kg at three weeks of age, and that less than 25% of the piglets have a weight of ≤5.9 kg.”

Sow body condition

Sows should be fed to feed to body condition score (BCS), not a fixed amount of feed. Ideally, the sows have a BCS of 2.75 (the sow’s backbone is visible, and the tips of the short ribs can be felt but are smooth) or 3.0 (well-rounded appearance, hips, and spine can only be felt with firm pressure) at 12 weeks of pregnancy, so we can feed more in the last month to achieve a BCS of 3-3.25 at farrowing. This is essential to ensure that sows have sufficient energy reserves for lactation and overall health.

Target body condition score – 2.75 at three months of gestation

Feed intake must be increased gradually during the last month of gestation as most fetal growth and mammary gland development occur during this period. This may involve raising energy-dense feeds or adjusting protein levels as needed.

Dr. Seksom stressed that “nutrition is not just the feed; it’s about feeding as well. To feed sows to BCS, assessments of BCS should be done regularly throughout gestation, ideally every 2-4 weeks. This allows for timely adjustments in feeding based on individual sow’s needs. Ensure that staff are trained one-on-one to accurately assess the body condition of sows. This includes recognizing the visual and tactile indicators of different scores and understanding how BCS impacts reproductive performance, longevity, and overall farm profitability.”

After farrowing, the sows must be monitored closely for any signs of excessive weight loss and feeding strategies adjusted accordingly to support recovery and lactation needs.

Piglet diarrhea

Many factors cause diarrhea and must be thoroughly investigated. For bacteria-caused diarrhea, Dr. Seksom advised a good hygiene program, whereas for viral causes, a vaccination program is essential. However, he emphasized that “for a vaccination program, you can’t just copy from another farm; it needs to be created specifically using the titers for diseases on your farm.”

Swine influenza is an often-overlooked cause of diarrhea in piglets. While it is primarily recognized for causing respiratory issues, the virus can also lead to scours in the first two weeks of piglets’ life. So, sows should be checked for symptoms of swine influenza (such as nasal discharge, sneezing and coughing, and inappetence) before farrowing. If necessary, they must be treated with paracetamol to reduce fever and symptoms.

Main disease causes of pre-weaning diarrhea

	Nursery period				Mortality level
	Days 1-3	Days 3-7	Days 7-14	Days 14-21	
Agalactia	√	√	√	√	Moderate
Clostridia	√	√	√		High
Coccidiosis		√	√	√	Low
E. coli	√	√	√		Moderate
PED	√	√	√		Variable
PRRS	√	√	√	√	Variable
Rotavirus			√	√	Low
TGE	√	√	√	√	High
Influenza		√	√		Low

Ensuring colostrum intake

The intake of an adequate quantity of colostrum is crucial for piglets to be protected during the first days of life. Best practices to ensure that piglets get □250 mL of colostrum include:

- **Teat access –** if a sow has a large litter or is unable to nurse all her piglets effectively, consider split suckling by separating larger, more vigorous piglets from the litter for a couple of hours after birth. This allows smaller or weaker piglets better access to the udder without competition. Syringe-feeding colostrum to smaller piglets is also effective.
- **Early access –** six hours after farrowing, the quality of colostrum begins to decline significantly. Additionally, the piglet can only absorb intact large IgG molecules, the major source of passive immunity, during the first 24 h after birth, prior to gut closure. In any case, by this time, the sow will start producing milk and not colostrum.
- **Sow behavior –** if a sow experiences pain or discomfort from injuries caused by her piglets’ teeth, she may become less willing to allow them to nurse, leading to delays in colostrum intake. Genetic background influences maternal behavior significantly. For example, some breeds exhibit stronger maternal instincts and better nursing behaviors than others. Selecting sows with proven good maternal traits can lead to improved outcomes in piglet survival and growth.
- **Drafts –** newborn piglets are born with low fat reserves and are highly susceptible to hypothermia. Drafts significantly impact the effective temperature experienced by piglets.
- **Staff training –** Staff must be trained to recognize signs of distress in both sows and piglets; training in techniques enables them to assist with nursing and feeding, which is crucial for timely interventions.

Weaning is a process, not just a one-time event

Research has shown that heavier piglets at weaning have better lifetime performance than lighter ones. Weaning weight is a more accurate indication of post-weaning growth than either birth weight or age. It is, therefore, important to establish the weaner immediately post-weaning to maintain growth rates, reduce pen variation, and lessen the amount of 'tail-enders' at the point of sale.

Dr. Seksom emphasized that "viewing weaning merely as a single event, rather than a process, overlooks the complexities involved in ensuring a smooth transition for the animals. He advocated for a comprehensive approach to weaning that includes the shown well-planned steps to support piglets during this critical phase. If the weaning process is managed effectively, you can significantly reduce the need for antibiotics."

Conclusion

"By integrating these holistic management strategies, pig producers can effectively raise pigs without antibiotics while promoting animal health, improving productivity, and addressing consumer concerns about antibiotic use in livestock production," summarized Dr. Seksom.

EW Nutrition's Swine Academy took place in Ho Chi Minh City and Bangkok in October 2024. Dr. Seksom Attamangkune, a leading expert in the nutrition and management of pigs in tropical conditions and former Head of the Animal Science Department and Dean of the Faculty of Agriculture at Kamphaeng Saen, Kasetsart University, was a reputable guest speaker at this event.

EU Agricultural Outlook 2024-2035: Projected Trends and Challenges

by Ilinca Anghelescu, Global Director Marketing & Communications, EW Nutrition

The European Union (EU) agricultural sector is confronted with challenges and uncertainties stemming from the geopolitical risks, extreme weather events, and evolving market demand. The EU Agricultural Outlook 2024-2035, published last month, highlights the anticipated trends, challenges, and opportunities facing the sector over the medium term, given several considerations likely shaping the future.

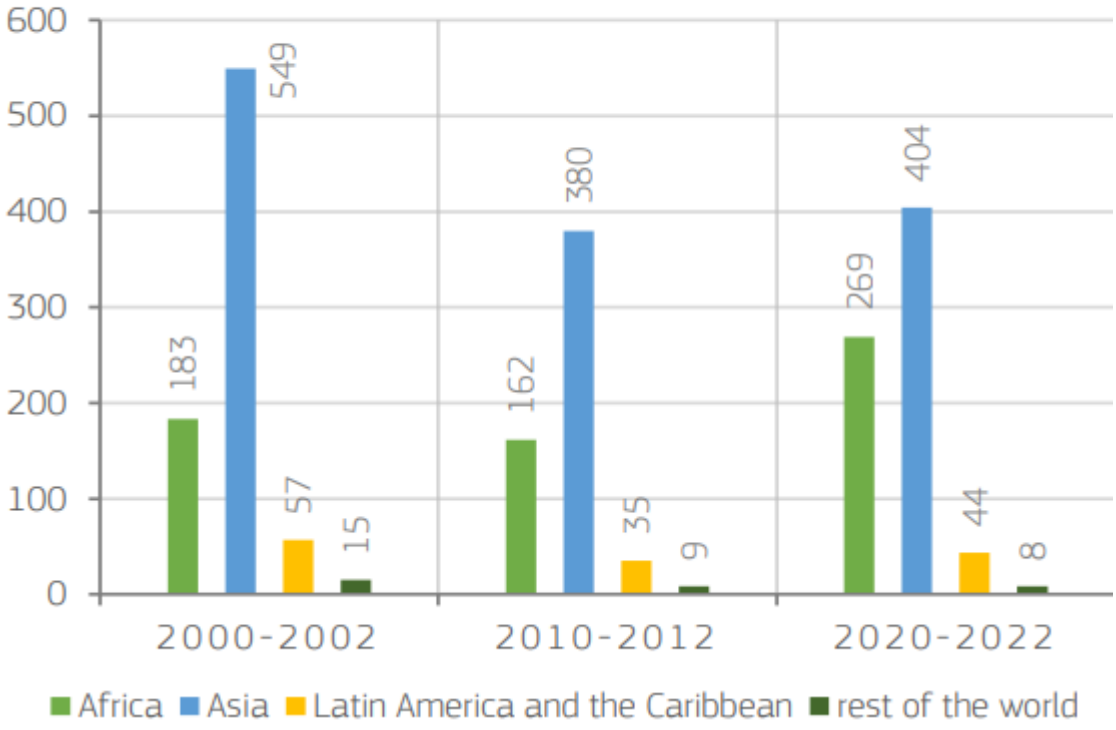
Initial considerations for EU agricultural trends

Macroeconomic context

The EU's real GDP growth is expected to stabilize, contributing to a stable economic environment for agriculture. Inflation rates are projected to return to the European Central Bank's target of 2% by 2025. Exchange rates will see the Euro slightly appreciating against the US dollar, and Brent crude oil prices are anticipated to stabilize in real terms at approximately $102 per barrel by 2035.

However, despite optimistic declarations in the recent past, we have not solved world hunger. Population growth in lower-income parts of the world is leading to an unequal distribution and, after an initial dip, the number of people going to bed hungry is expected to rise again. Moreover, in the next ten years some improvements are foreseen but no massive changes are expected in the percentage of food groups and calories available per capita.

GRAPH 1.9 Number of people undernourished (million, 3-year average)



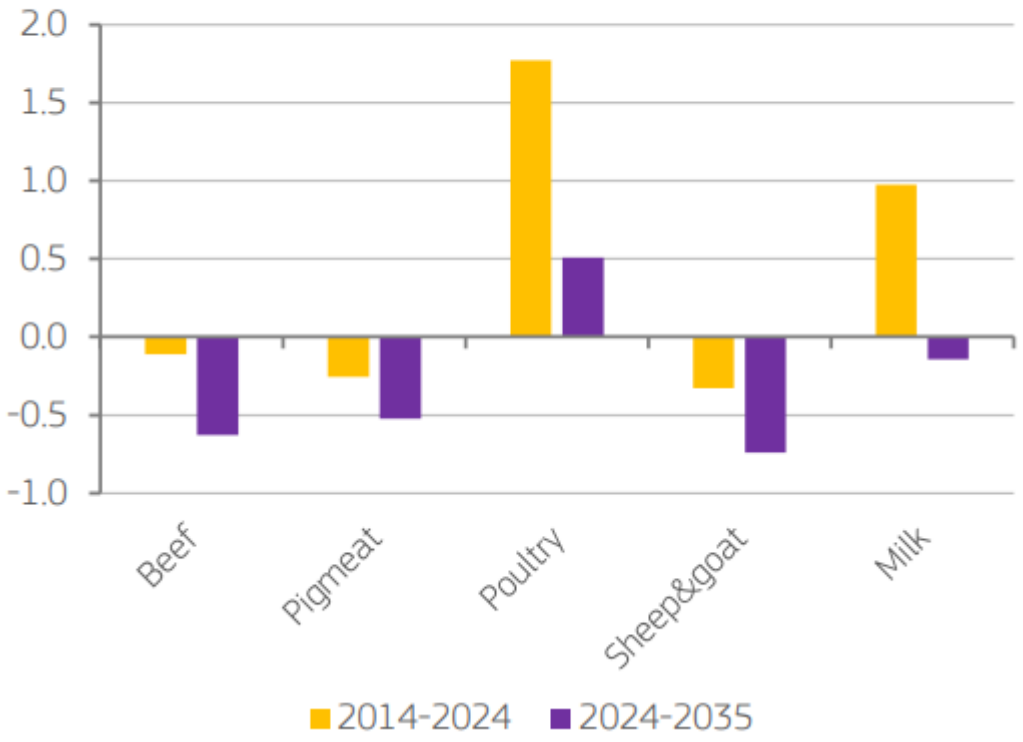
Climate change impact

Climate change is reshaping EU agriculture by affecting critical natural resources such as water and soil. Agroclimatic zones are shifting northwards, with implications for crop cultivation patterns. For example, regions traditionally suitable for wheat may increasingly shift focus to other crops better adapted to new climate conditions.

Consumer demand

Consumer awareness of sustainability is driving significant shifts in dietary preferences in the EU. The demand for plant proteins like pulses is increasing, while meat consumption, particularly beef and pork, is declining due to environmental and health concerns. Conversely, demand for fortified and functional dairy products is on the rise.

GRAPH 1.18 Annual growth in production for selected animal products over selected periods (%)



What are the projected agricultural trends in 2024-2035?

Arable crops

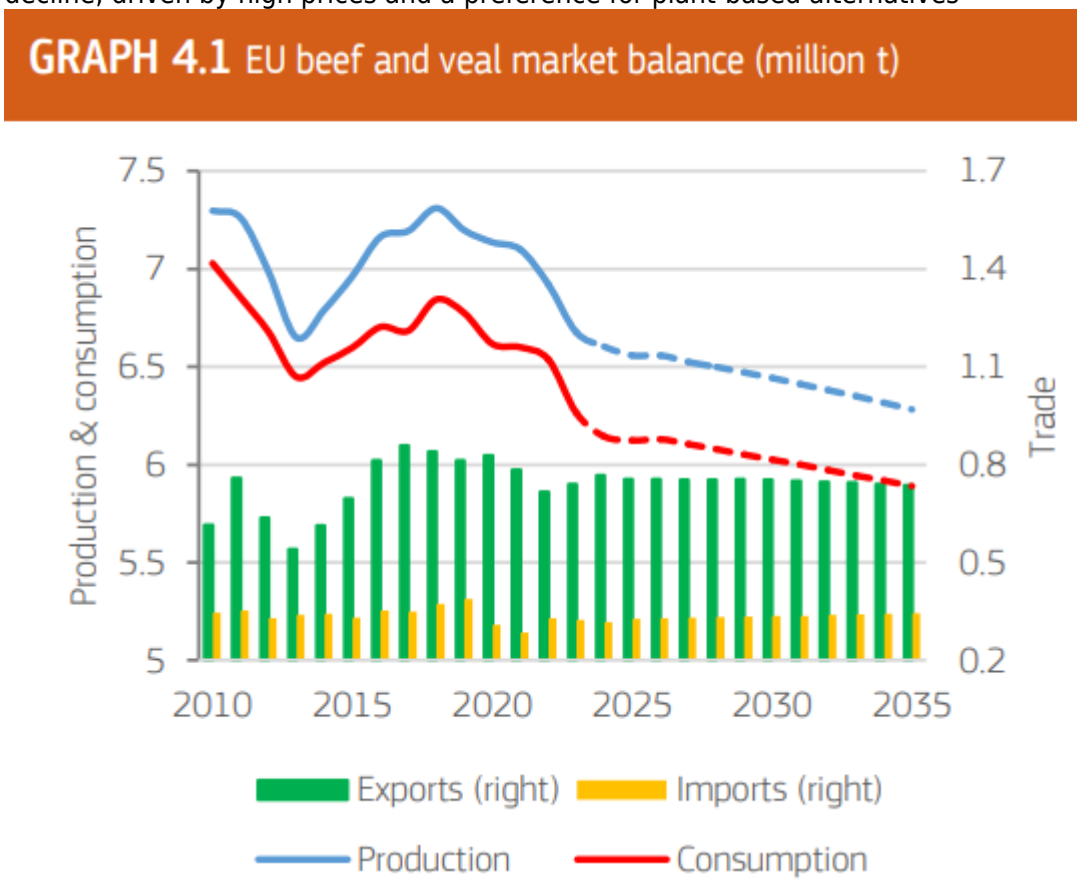
- **Land use**: While the total agricultural land in the EU remains stable, a shift in crop focus is anticipated. Land allocated for cereals and rapeseed is expected to decline, making way for soya beans and pulses due to reduced feed demand and policy incentives for plant proteins.
- **Cereals**: Production of cereals, including wheat, maize, and barley, is forecast to stabilize with minor yield increases due to advancements in precision farming and digitalization. Wheat production is set to recover after an expected dip in 2024.

Dairy Sector

- **Milk production**: Although milk yields are projected to increase due to improved genetics and farming practices, the decline in the dairy cow herd will result in a slight overall reduction in milk production by 2035.
- **Dairy products**: The production of cheese and whey will grow steadily, driven by domestic and international demand. Conversely, the consumption of drinking milk is expected to decline, while demand for fortified and functional dairy products grows.

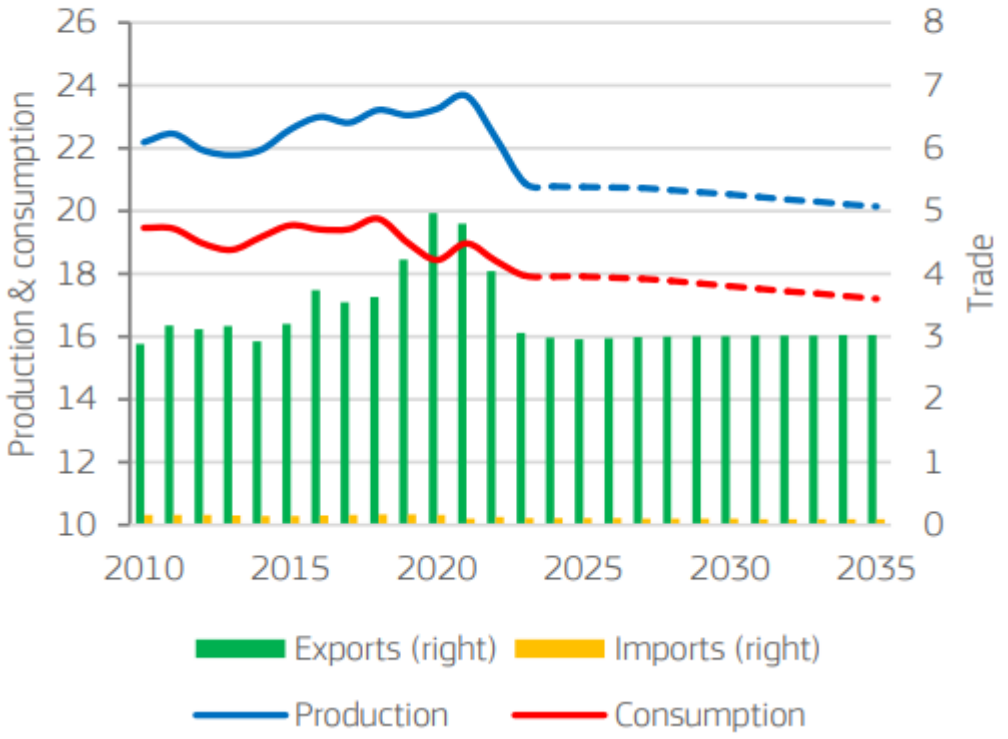
Meat Sector

- **Beef and veal**: Beef production is expected to decrease by 10%, with the EU cow herd shrinking by 3.2 million head by 2035. This decline is attributed to sustainability concerns, high production costs, and changing consumer preferences. Beef consumption is also projected to decline, driven by high prices and a preference for plant-based alternatives



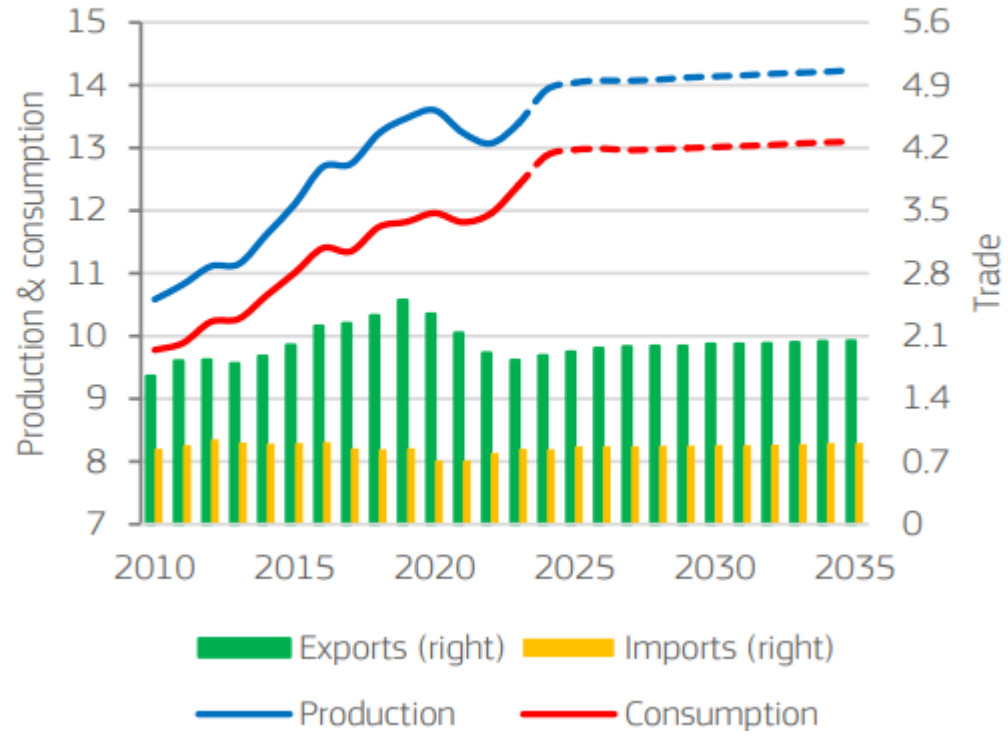
- **Pig meat**: The sector faces a projected annual production decline of 0.9%, equating to a reduction of nearly 2 million tons compared to 2021-2023 levels. This trend is largely influenced by concerns over sustainability and a declining preference for fatty meats.

GRAPH 4.4 EU pigmeat market balance (million t)

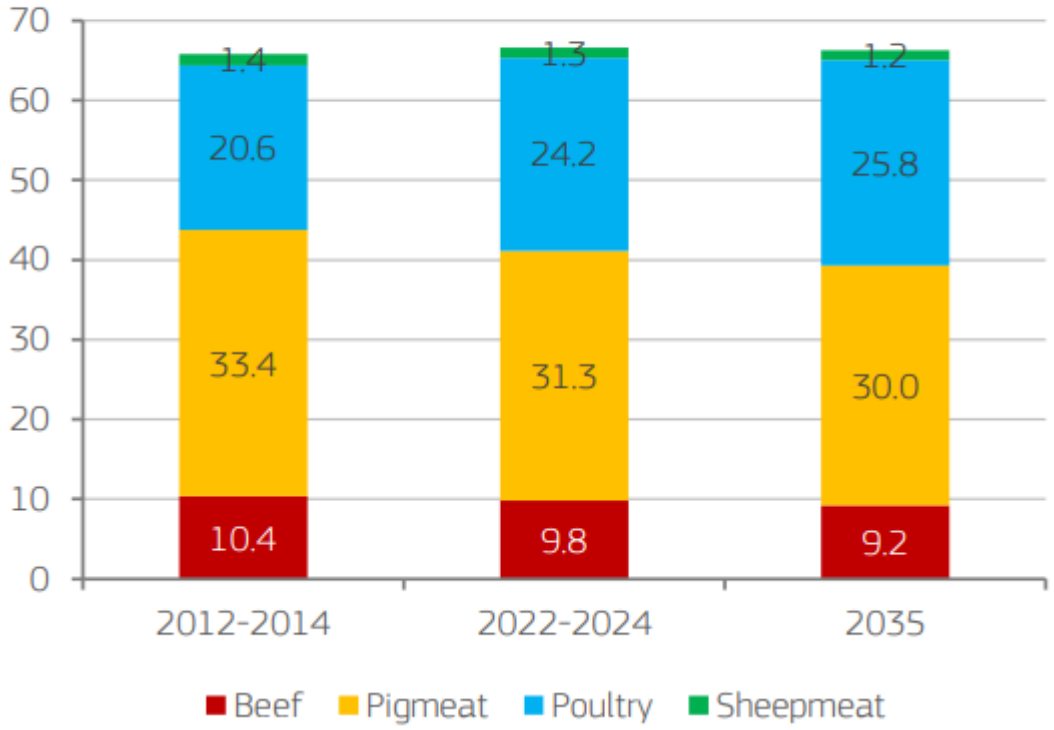


- **Poultry**: In contrast, poultry production is forecast to increase due to its healthier image, lower cost, and minimal cultural or religious constraints. However, the growth rate will be slower than in the previous decade.

GRAPH 4.7 EU poultry meat market balance (million t)



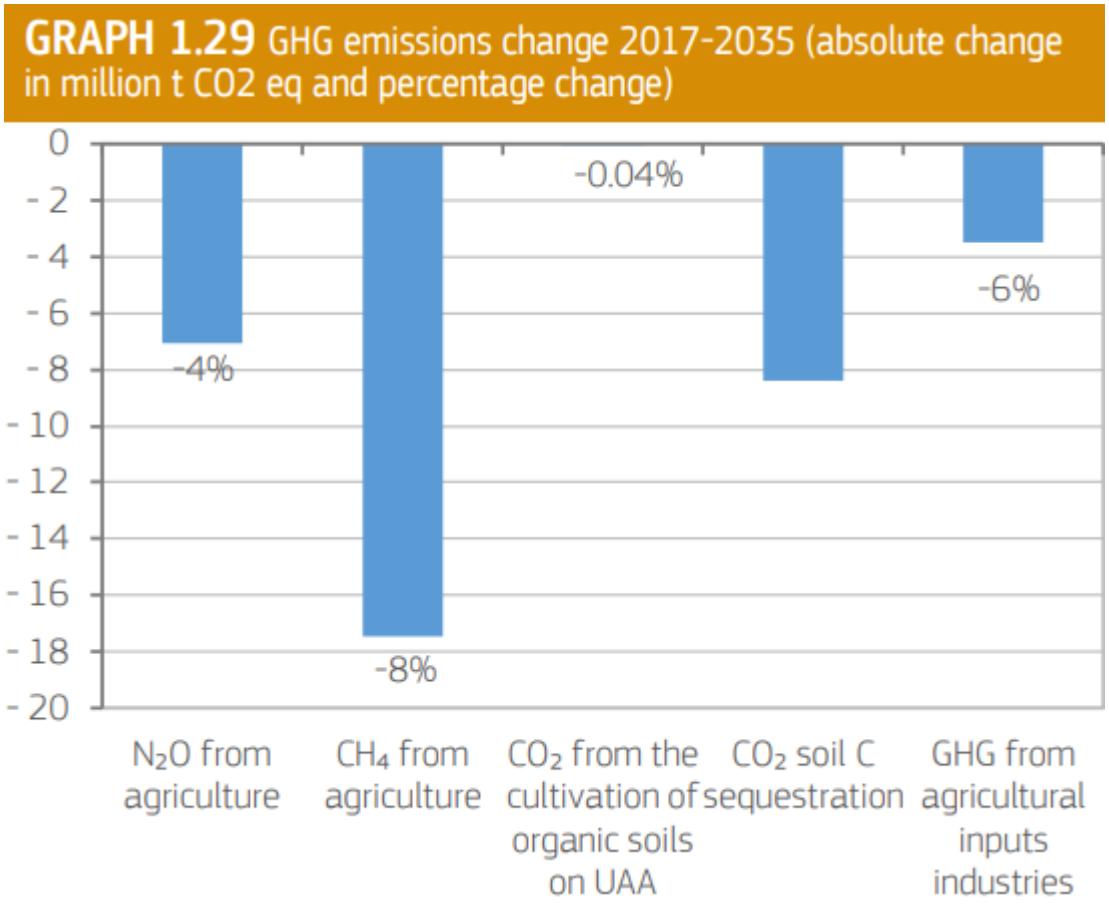
GRAPH 1.23 EU per capita meat consumption by meat type (kg)



Upcoming challenges in agriculture

Climate Resilience

The increasing frequency of extreme weather events requires investments in resilient farming practices. Adoption of precision farming and crop diversification is critical to mitigate climate impacts. However, if existing policies are further implemented, greenhouse gas emissions are expected to see a significant decline.



Policy Frameworks

The Common Agricultural Policy (CAP) plays a pivotal role in steering the sector toward sustainability. However, farmers face challenges in adapting to stricter environmental regulations and securing sufficient funding for transitions. The recent Mercosur agreement has already stirred dissent in EU countries that fear unfettered competition without similar policy regulations.

Market Dynamics

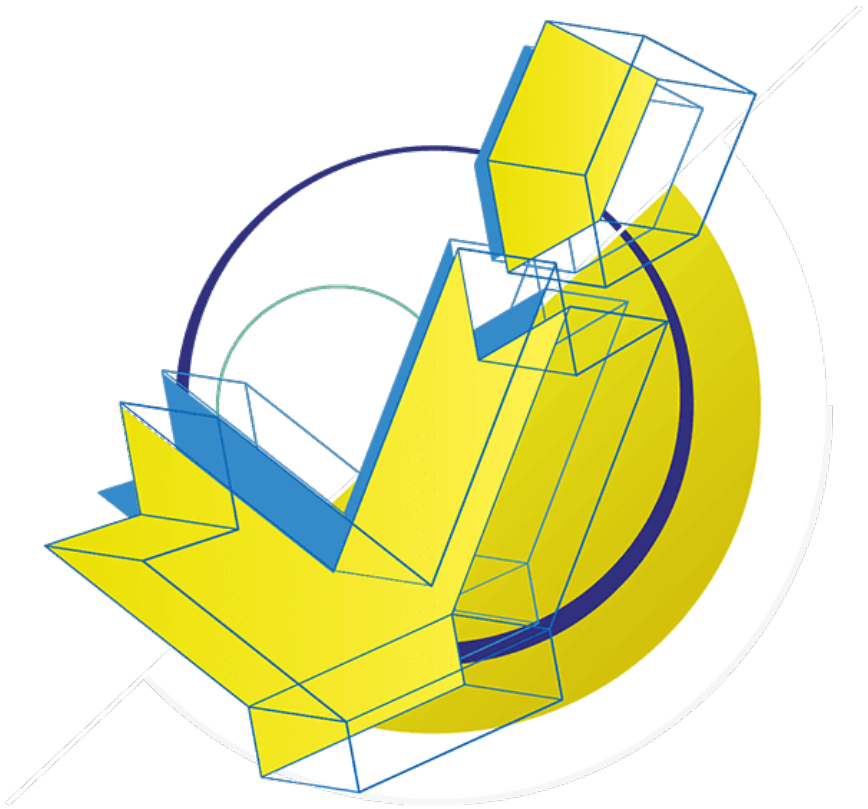
Global trade tensions and competition in agricultural markets pose significant risks. While the EU remains a net exporter, dependence on imports for certain crops, such as soya beans, highlights vulnerabilities in supply chains.

In a weather-shock scenario for the EU feed supply chain, the report highlights that increased feed prices would drive up retail meat prices by 10% for poultry and pork producers, and 5% for beef and veal producers. The increase would be less abrupt for retail prices, rising by 3% for pork, and 4% for poultry meat. Producers need to be mindful of the absorbed costs of these potential shocks.

Conclusion

The EU agricultural sector must continue to balance productivity, sustainability, and consumer preferences. While advancements in technology and policy frameworks offer pathways to resilience, addressing challenges such as climate change and market dynamics will be critical to achieving long-term goals.

EW Nutrition welcomes two additions in key global roles



VISBEK, JANUARY 2025 – EW Nutrition confirms two names were added to key positions in its global team. From January 2025, Marie Gallissot and Nadia Yacoubi have joined the German-headquartered animal nutrition company.

Marie Gallissot joins as Category Manager Feed Quality Solutions, with a rich background and over 15 years' experience in toxin solutions and feed management. She is going to oversee a portfolio comprising toxin binders, antioxidants, acidifiers and more, working in close collaboration with regional affiliates as well as connected platforms in EW Nutrition.

Nadia Yacoubi joins as Phytogenic Products Manager inside EW Nutrition's Gut Health platform. With a doctoral degree in Veterinary Sciences, held jointly from Ghent and Nantes universities, she brings 10+ years of technical expertise in the field of gut health, as well as animal husbandry and food safety.

"We've had a quick and comprehensive onboarding in Germany,", says Nadia Yacoubi, "and we're both already joining meetings in EW Nutrition's regional and global teams, which is a great way to hit the ground running." With this hands-on approach, adds Marie Gallissot, "it's easy to get acquainted with the people, the passion, and the energy driving EW Nutrition forward."

Jan Vanbrabant, EW Nutrition's CEO, welcomed them during the onboarding week, saying "We want to make sure we show them the full picture: who we are, where we are and where we want to be. And we are happy that they are such a great fit to our corporate culture, bringing expertise, integrity, team spirit, and an element of fun and passion."

EW Nutrition is a global player in the animal health and nutrition industry, delivering solutions for gut health, feed quality, digestibility, and more. It is headquartered in Northern Germany

and focuses on promoting sustainable growth through reduced FCR, natural support against challenges, reduced need for antibiotics, and planet-friendly protein production.

Nadia Yacoubi

Marie Galissot

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Antimicrobial resistance in animal production workers, a serious challenge

With 73% of human-use antibiotics also used in food-animal production, antimicrobial resistance (AMR) is a pressing global health concern, particularly in contexts where humans and animals are in close proximity, such as in animal production facilities. This issue is exacerbated by the widespread use of antibiotics in livestock farming, which not only promotes resistance in bacteria but also poses direct risks to farm workers.

Antimicrobial resistance in farm workers in Denmark

In Denmark, a country renowned for its robust agricultural monitoring systems, significant strides have been made in tracking AMR. A comprehensive report from 2015 emphasized the occurrence of antimicrobial-resistant bacteria, particularly in livestock-associated methicillin-resistant Staphylococcus aureus (LA-MRSA). The Danish Integrated Antimicrobial Resistance Monitoring and Research Program (DANMAP) highlighted that farm workers frequently came into contact with these resistant pathogens,

which posed occupational hazards and public health challenges (Bager et al., 2015). The program found that 88% of pigs carried LA-MRSA, and farm workers had significantly elevated exposure risks, particularly in intensive swine operations (DANMAP 2015 Report).

Antimicrobial resistance in farm workers in the US

Studies in the United States have revealed even more alarming statistics. Farm workers in intensive animal farming environments were found to be 32 times more likely to develop antibiotic-resistant infections than the general population. This increased risk was attributed to prolonged exposure to resistant bacteria and antibiotic residues in animal feed and the environment (Silbergeld et al., 2008). The close interaction between humans and animals in confined spaces fosters the transfer of resistant genes, making these workers a vulnerable group.

Mechanisms of resistance spread

The spread of AMR from livestock to humans can occur through several pathways:

- Direct contact: Handling animals and exposure to manure or bodily fluids.
- Airborne transmission: Dust particles containing resistant bacteria.
- Contaminated food: Consumption of undercooked or improperly handled meat products.
- Environmental contamination: Water and soil contaminated with antibiotics or resistant bacteria.

What can be done?

Even in countries where antimicrobials reduction legislation has been in place for almost two decades, such as Germany or Sweden, new resistance cases are constantly discovered. In supermarkets around the world, meat contaminated with antibiotic-resistant superbugs is still a common occurrence. And in antibiotic resistance hot spots, “from 2000 to 2018, P50 increased from 0.15 to 0.41 in chickens—meaning that 4 of 10 antibiotics used in chickens had resistance levels higher than 50%. P50 rose from 0.13 to 0.43 in pigs and plateaued between 0.12 and 0.23 in cattle” (Dall, 2019). These hot spots are spread across the globe, from south and northeast India, northeast China, north Pakistan, Iran, and Turkey, to the south coast of Brazil, Egypt, the Red River Delta in Vietnam, and areas surrounding Mexico City, Johannesburg, and more recently Kenya and Morocco.

Globally, antimicrobial use in animals is projected to increase by 67% by 2030, especially in low- and middle-income countries where regulatory frameworks are weaker. Denmark provides a successful model for mitigating these risks. Policies such as the “Yellow Card” scheme have reduced antibiotic use in pigs by promoting alternative husbandry practices and strict monitoring. This approach has also reduced the prevalence of resistant bacteria in animal populations, offering a replicable strategy for other nations (Alban et al., 2017).

Recommendations for mitigation

- Strengthening surveillance: Programs like DANMAP should be implemented globally to monitor antibiotic usage and resistance trends in animals and humans.
- Reducing antibiotic use: Phasing out non-therapeutic uses of antibiotics, particularly as growth promoters, and avoiding Critically Important Antimicrobials for Human Medicine.
- Protecting workers: Providing personal protective equipment (PPE) and regular health screenings for farm workers.
- Public awareness: Educating communities about the risks of AMR and promoting safe food handling practices.

The evidence from Denmark and the U.S. underscores the urgent need to address AMR in animal production settings. Protecting farm workers from AMR not only safeguards their health but also prevents the spread of resistant pathogens across the wider public.

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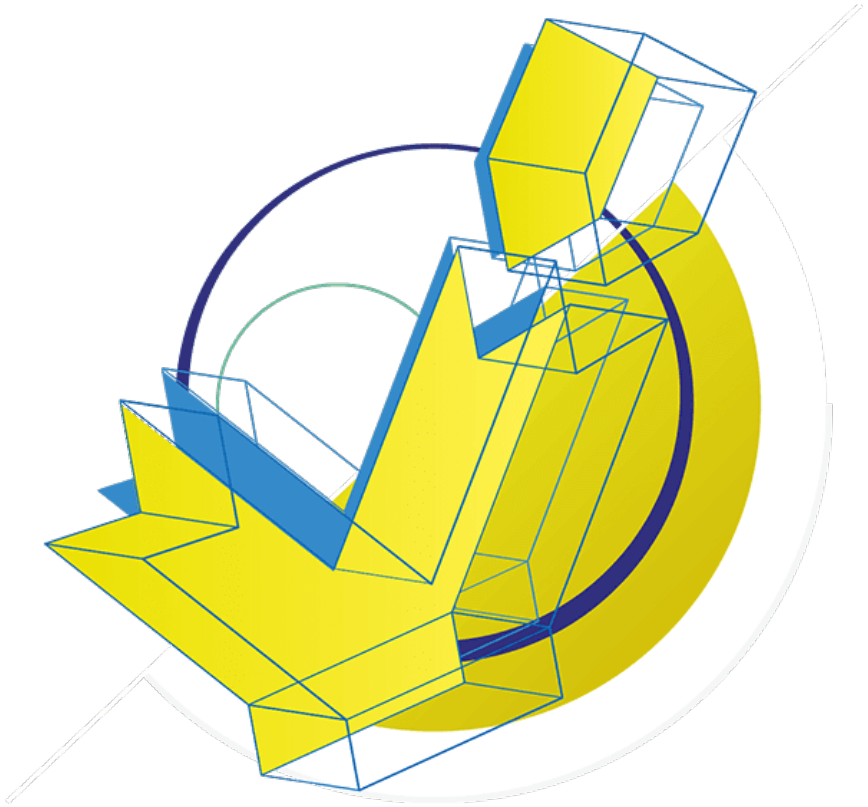
EW Nutrition appoints two new Regional Directors



VISBEK, 6 January 2025 – EW Nutrition, a leading player in the global animal health and nutrition industry, has appointed two top industry professionals to lead the SEAP and China teams, respectively. After another year of geographical and commercial expansion, EW Nutrition has recently announced that Gert-Jan Gerrits and Hai Xia Zhu will lead two of its most important growth regions.

Starting with January 1st, Hai Xia Zhu will lead EW Nutrition's China team. With a background of more than 15 years in leadership roles in animal protein production, she takes over a growing business in a highly promising market. "EW Nutrition's team in China has already demonstrated excellence in providing customer-centric solutions. I'm happy to lead the team into the next chapter of our growth."

Also from January 1st, Gert-Jan Gerrits takes over the South East Asia and Pacific unit, bringing more than 20 years of experience leading teams in the animal farming, health, and nutrition industry. He will be located in Singapore. "I'm extremely pleased with the welcome I have received in EW Nutrition, and quite impressed with the range of powerful solutions and capabilities it brings to the SEAP market. I look forward to working with a team of high achievers," says Gert-Jan Gerrits.

Jan Vanbrabant, EW Nutrition's CEO, has already welcomed the two newcomers for an intense first week of onboarding at the German headquarters. "We provide top-tier solutions for animal gut health, toxin risk management, growth performance etc, and we now have a full team of top-tier executives leading EW Nutrition's commercial expansion into a new era of growth. We welcome Gert-Jan and Hai Xia with open arms and wish them every success."

At a time when other companies seem to divest or restructure, these are the latest appointments in a chain of remarkable top hires to EW Nutrition's global team, reflecting the company's commitment to solid growth around the world.

Hai Xia Zhu

Gert Jan Gerrits

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Sustainability will push more by-products into pig feed – Keep track of mycotoxins!

Mycotoxin Team EW Nutrition

Most grains used in feed are susceptible to mycotoxin contamination, causing severe economic losses all along feed value chains. As skyrocketing raw material prices force producers to include a higher proportion of economical cereal by-products in the feed, the risks of mycotoxin contamination likely increase. This article reviews why mycotoxins cause the damage they do – and how effective toxin-mitigating solutions prevent this damage.

Mycotoxin contamination of cereal by-products requires solutions

Cereal by-products may become more important feed ingredients as grain prices increase. However, from a sustainability point of view and considering population growth, using cereal by-products in animal feed makes much sense. Distiller's dried grains with solubles (DDGS) are a good example of how by-products

from food processing industries can become high-quality animal feed.

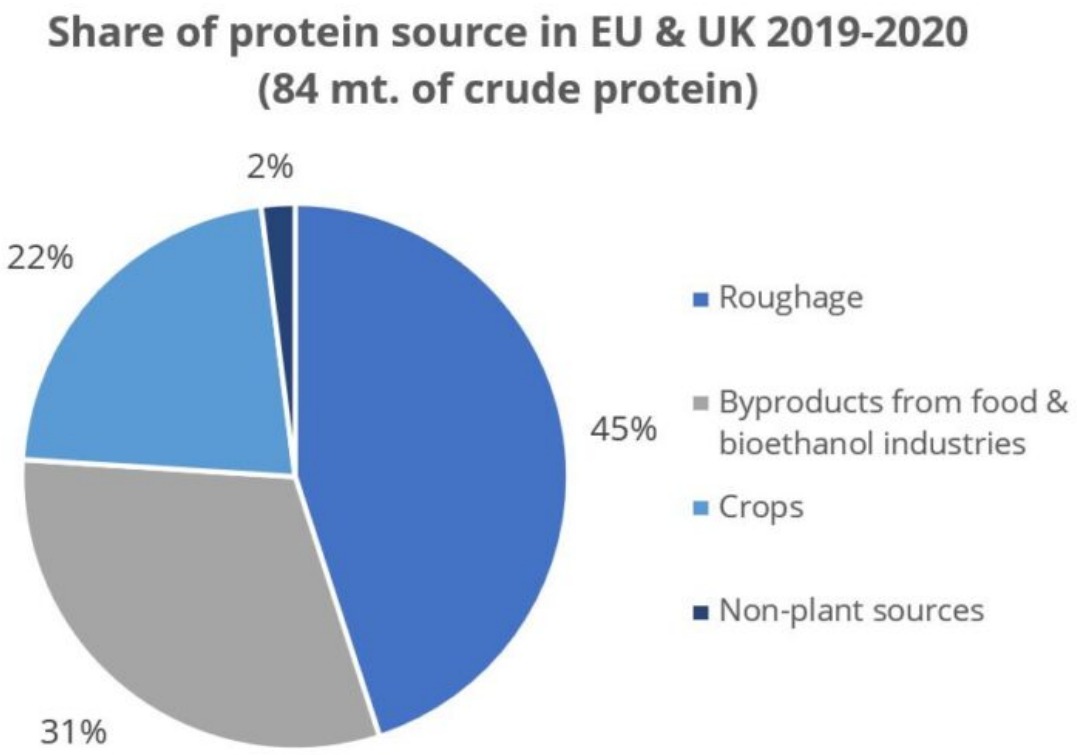

Figure 1: By-products are a crucial protein source (data from FEFAC Feed&Food 2021 report)

Still, research on what happens to mycotoxins during food processing shows that mycotoxins are concentrated into fractions that are commonly used as animal feed (cf. Pinotti et al., 2016; Caballero and Heinzl, 2022). To safeguard animal health and performance when feeding lower-quality cereals, monitoring mycotoxin risks through regular testing and using toxin-mitigating solutions is essentialy.

Problematic effects of mycotoxins on the intestinal epithelium

Most mycotoxins are absorbed in the proximal part of the gastrointestinal tract. This absorption can be high, as in the case of aflatoxins (ca. 90%), but also very limited, as in the case of fumonisins (< 1%); moreover, it depends on the species. Notably, a significant portion of unabsorbed toxins remains within the lumen of the gastrointestinal tract.

Importantly, studies based on realistic mycotoxin challenges (e.g., Burel et al., 2013) show that the mycotoxin levels necessary to trigger damaging processes are lower than the levels reported as safe by EFSA, the Food Safety Agency of the European Union. The ultimate consequences range from diminished nutrient absorption to inflammatory responses and pathogenic disorders in the animal (Figure 2).

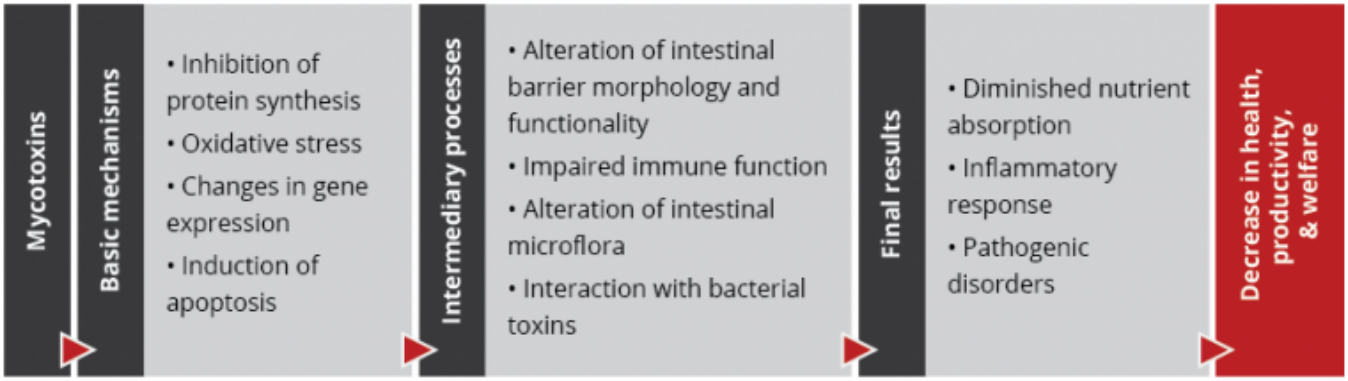

Figure 2: Mycotoxins' impact on the GIT and consequences for monogastric animals

1. Alteration of the intestinal barrier's morphology and functionality

Several studies indicate that mycotoxins such as aflatoxin B1, DON, fumonisin B1, ochratoxin A, and T2, can increase the permeability of the intestinal epithelium of poultry and swine (e.g., Pinton & Oswald, 2014). This is primarily a consequence of the inhibition of protein synthesis.

As a result, there is an increase in the passage of antigens into the bloodstream (e.g., bacteria, viruses, and toxins). This increases the animal's susceptibility to infectious enteric diseases. Moreover, the damage that mycotoxins cause to the intestinal barrier entails that they are also being absorbed at a higher rate.

2. Impaired immune function in the intestine

The intestine is a very active immune site, where several immuno-regulatory mechanisms simultaneously defend the body from harmful agents. Immune cells are affected by mycotoxins through the initiation of apoptosis, the inhibition or stimulation of cytokines, and the induction of oxidative stress.

3. Alteration of the intestinal microflora

Recent studies on the effect of various mycotoxins on the intestinal microbiota show that DON and other trichothecenes favor the colonization of coliform bacteria in pigs. DON and ochratoxin A also induce a greater invasion of *Salmonella* and their translocation to the bloodstream and vital organs in birds and pigs – even at non-cytotoxic concentrations.

It is known that fumonisin B1 may induce changes in the balance of sphingolipids at the cellular level, including for gastrointestinal cells. This facilitates the adhesion of pathogenic bacteria, increases in their populations, and prolongs infections, as has been shown in the case of *E. coli*. The colonization of the intestine of food-producing animals by pathogenic strains of *E. coli* and *Salmonella* also poses a risk to

human health.

4. Interaction with bacterial toxins

When mycotoxins induce changes in the intestinal microbiota, this can increase the endotoxin concentration in the intestinal lumen. Endotoxins promote the release of several cytokines that induce an enhanced immune response, causing inflammation, thus reducing feed consumption and animal performance, damage to vital organs, sepsis, and death of the animals in some cases.

The synergy between mycotoxins and endotoxins can result in an overstimulation of the immune system. The interaction between endotoxins and estrogenic agents such as zearalenone, for example, generates chronic inflammation and autoimmune disorders because immune cells have estrogen receptors, which are stimulated by the mycotoxin.

Increased mycotoxin risks through by-products? Invest in mitigation solutions

To prevent the detrimental consequences of mycotoxins on animal health and performance, proactive solutions are needed that support the intestinal epithelium's digestive and immune functionality and help maintain a balanced microbiome in the GIT. This becomes even more important as the current market conditions will likely engender a long-term shift towards including more cereal by-products in animal diets.

Trial data shows that EW Nutrition's toxin-mitigating solution SOLIS MAX 2.0 provides adequate protection against feedborne mycotoxins. The synergistic combination of ingredients in SOLIS MAX 2.0 prevents mycotoxins from damaging the animals' gastrointestinal tract and entering the bloodstream and additionally acts as antioxidant and liver-protecting:

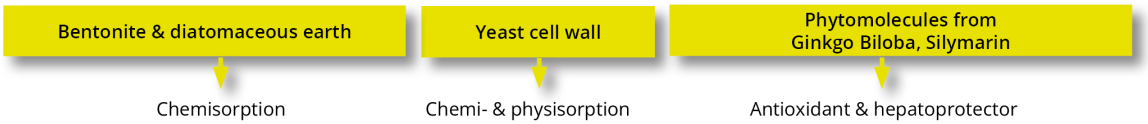

Figure 3: Moa of Solis Max 2.0

In-vitro study shows strong mitigation effects of SOLIS MAX 2.0 against a wide range of mycotoxins

Animal feed is often contaminated with two or more mycotoxins, making it essential for an anti-mycotoxin agent to be effective against a wide range of different mycotoxins. A trial with SOLIS MAX 2.0 was conducted at an independent laboratory in Spain with an inclusion level of the product of 0.10% (equivalent to 1 kg per ton of feed). A phosphate buffer solution at pH 7 was prepared to simulate intestinal conditions in which a portion of the mycotoxins may be released from the binder (desorption). The following mycotoxins were evaluated in the test (see Table 1):

Table 1: Mycotoxin challenges

Mycotoxin	Challenge (ppb)
Aflatoxin B1 (AFB1)	100
Deoxynivalenol (DON)	1,000
Fumonisin B1 (FB1)	2,000
T-2 toxin (T-2)	500
Ochratoxin A (OTA)	500
Zearalenone (ZEA)	1,000

Each mycotoxin was tested separately by adding a challenge to buffer solutions, incubating for one hour at 41°C, to establish the baseline (table). At the same time, a solution with the toxin challenge and Solis Max 2.0 was prepared, incubated, and analyzed for the residual mycotoxin to find the binding efficacy. All analyses were carried out using high-performance liquid chromatography (HPLC) with standard detectors.

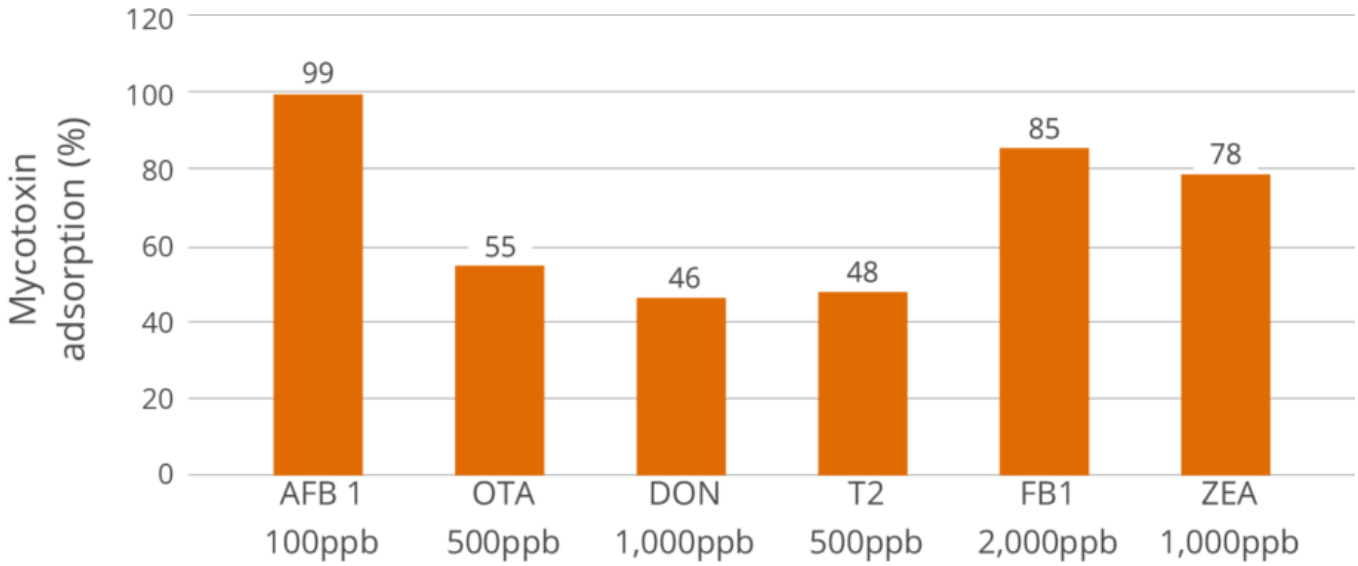

Figure 4: SOLIS MAX 2.0 (1 kg/t of feed) adsorption capacity against different mycotoxins (%)

The results (Figure 4) demonstrate that SOLIS MAX 2.0 is a highly effective solution against the most common mycotoxins in raw materials and animal feed.

Mycotoxin risk management for better animal feed

A healthy gastrointestinal tract is crucial to animals' overall health: it ensures that nutrients are optimally absorbed, provides adequate protection against pathogens through its immune function, and is key to maintaining a well-balanced microflora. Even at levels considered safe by the European Union, mycotoxins can compromise different intestinal functions, resulting in lower productivity and susceptibility to disease.

The globalized feed trade, which spreads mycotoxins beyond their geographical origin, climate change, and raw material market pressures additionally escalate the problem. On top of rigorous testing, producers should mitigate unavoidable mycotoxin exposures by using solutions such as SOLIS MAX 2.0 – for stronger animal health, welfare, and productivity.

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