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Nutrinfo

HOW WILL GENERATION Z EXPECTATIONS TRANSFORM THE POULTRY MEAT MARKET?

GERMAN PIG POPULATION DOWN BY 15 PERCENT IN THREE YEARS

STRESS REDUCTION THROUGH POSITIVE REINFORCEMENT: IT WORKS FOR COWS TOO

WHAT ROLE WILL CIRCULARITY PLAY IN THE FUTURE OF FEED PRODUCTION??

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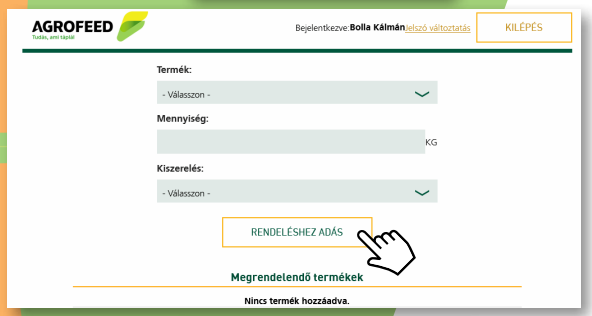
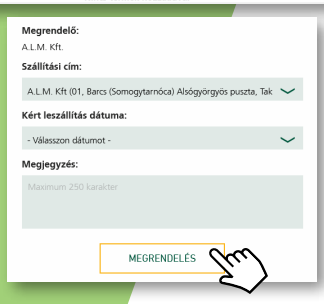


3rd STEP — SPECIFY SHIPPING ADDRESS AND DATE

Enter the delivery address and select the date according to the delivery days of the given region.



4th STEP — NOTES

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Dear Reader,

I think it is correct to say that we live in a fast-paced world. This is true for all areas of life. Rapid change can also be experienced in agriculture, which we hope also means development. We can say that no matter what field we work in, almost nothing can be done in the same way as we learned decades or even five years ago. "Lifelong learning" might have seemed like an empty phrase before, but today it has become clear to everyone that we have to keep up with the rapid development of technologies. In the meantime, we have to adopt completely new approaches and new trends, we often come across new discoveries that seem revolutionary, which are sometimes difficult to evaluate from a scientific point of view and to decide whether we are reading about a real scientific result or rather a pseudo-scientific tabloid news.

We can read an article about cattle ethology. This is a topic that we have to deal with more and more in parallel with the spread of robotic milking technologies. It is not possible to operate a robot farm and provide adequate answers to the problems that arise without knowing and continuously studying the behavior of cattle. This requires a radically different approach compared to the milking parlor system.

In an international perspective, we can read about the situation of the Polish dairy sector, a large-capacity Russian alfalfa processing plant producing for the Chinese market and the crisis caused by the seed shortage in Russia, the impact of world crises and unpredictable weather conditions on agriculture and, within that, on the price level of food products.

Such divisive topics as the creation of a global atlas of edible insects, the slightly exaggerated role of cattle breeding in methane pollution or the production of rice enriched with beef muscle cells in South Korea were also examined.

This also shows that agriculture, and cattle breeding within it, is facing new challenges and must respond to information dumping that often negatively affects public opinion, since substitute products of vegetable origin and laboratory artificial meat cannot be an alternative to quality dairy products and beef in milk production.

Nutrinfo magazine has been providing an overview of the world's latest, innovative agricultural news for nearly three years. We try to provide our partners with information that is interesting and can also be used in practice, with which they can run their own businesses more efficiently. In addition to the transfer of professional knowledge, we would like to invite you to our UEFA EURO 2024 betting game, which you can find more information about in this issue of our magazine.

Best regards:

Dr. Péter Papp
cattle reproduction biologist,
feeding specialist consultant

Győr, 3 June, 2024

Chilli peppers help cows use energy more efficiently

Adding the botanical extract capsicum oleoresin, obtained from chilli peppers and/or clove oil to the cattle's rations resulted in improved efficiency of energy utilisation in peak-lactation dairy cows, according to a study from Penn State researchers in the United States.

The findings suggest that cattle would use the available energy for body weight gain rather than milk yield or milk components. They suggest a potential positive physiological and environmental effect of supplementation due to the combination of botanicals. From previous studies, the researchers knew that botanicals had the potential to modify fermentation in the dairy cow's rumen, but lead author Professor Alex Hristov said he was particularly interested in the post-ruminal, physiological effects of the botanicals.

His research group in the College of Agricultural Sciences has experimented with supplementing the feed of high-performing dairy cows with a range of additives, including seaweed, garlic and oregano oils to synthetic additives in a bid to reduce dairy environmental emissions from dairy farms.

The 10-week experiment conducted at the Penn State Dairy Barns, saw 48 Holstein cows randomly assigned to 3 dietary treatments. The first group's rations were supplemented with 300 mg of capsicum oleoresin per cow per day, the second group received the same amount of capsicum oleoresin and clove oil per cow per day, and there was a control group without supplementation.

Throughout the experiment, body weight increased in cows supplemented with capsicum oleoresin and a combination of the capsicum and clove oil, by 850 and 660n g per day, compared to a negligible 10 g per day for the unsupplemented control group. Cows fed diets supplemented by the botanicals also exhibited higher efficiency of energy utilisation, revealed in several metabolic measurements.

Via www.dairyglobal.net, 02/04/2024.
https://www.dairyglobal.net/health-and-nutrition/nutrition/chilli-peppers-help-cows-use-energy-more-efficiently/

Stress reduction through positive reinforcement: it works for cows too

Positive reinforcement training (PRT) has shown promise in reducing stress in companion species and enhancing animal welfare, but little research has been devoted to farm animals. It prompted researchers at The University of British Columbia to see if dairy cows could learn to reduce distress responses to procedures such as veterinary care, reduce the risk of injury and help them feel comfortable with new stimuli.

The team started with a group of 20 Holstein dairy heifers ranging from 3-6 months old and which had previous experience in the cattle chute areas and with human handling. They predicted that the heifers trained with PRT would show more anticipatory and play behaviours than the control heifers in the period before gaining access to a chute. The animals were randomly assigned to either a group receiving positive reinforcement training or a control group receiving standard farm handling in the chute.

The study involved 28 training sessions for each animal over 4 days a week with 1 session per day. Heifers were first brought into a waiting area and were then allowed to enter the training area. For the training group, grain was used as a food reinforcement to progress through the stages. The heifers were trained to touch a target with their muzzle – this target was then gradually moved until the animals were fully entering the chute. Control heifers were also familiarised with the same chute but were not provided with a food reward

Jennifer Heinsius, PhD student in the Faculty of Land and Food Systems, said: "Overall, the dairy heifers trained with positive reinforcement showed more anticipatory behaviours in the start box than the control group – they transitioned between behaviours more frequently, indicating they were anticipating the start of their training sessions and their food reward." The training group also displayed more play behaviour, including running and jumping, showing they considered the training experience to be a positive one.

Via www.dairyglobal.net, 26/03/2024.
https://www.dairyglobal.net/health-and-nutrition/health/reducing-dairy-cow-stress-with-positive-reinforcement/

Cost increases and investment: the Polish dairy sector

Although the Polish dairy sector's financial performance remains under pressure, companies are showing willingness to invest in their operations, a report from the Polish Chamber of Milk indicated.

During the first three-quarters of 2023, the dairy sector in Poland generated a net revenue of PLN 38.3 billion (US$9.62 billion), down 10.1% compared with the previous year. Exports revenue dropped by 6.9% to PLN 6.8 billion (US$1.71 billion). The sector's financial performance is mixed, with the cost of milk delivered to dairy plants totalling PLN 11.6 billion (US$2.91 billion), up 2% compared with the previous year. Meanwhile, the average purchase price dropped by 8.3% to PLN 2.07 (US$0.52) per litre, the Chamber of Milk reported.

Cheaper raw milk was one of the key factors bolstering the dairy processing segment's profitability. Overall, operational costs stood at PLN 38.3 billion (US$9.62 billion), which was 6.2% below the previous year, while energy costs jumped 13.7%. Costs associated with external services like transport and logistics jumped 7.2% and wages and salaries increased 7.9%.

In the first half of 2023, the Polish dairy industry generated a net loss, laying the ground for negative forecasts about the industry's future. However, new statistical data shows that the Polish dairy industry is back above the breakeven point. The Chamber of Milk calculated that only 49.5% of dairy companies generated a profit, which compares to 79% in the previous year.

Remarkably, the worsening financial results did not discourage dairy companies from keeping up with their investment plans. In the first three-quarters of 2023, Polish dairy businesses invested PLN 563.9 million (US$141.6 million), almost equal to the same period of the previous year.

Via www.dairyglobal.net, 08/03/2024.
https://www.dairyglobal.net/industry-and-markets/market-trends/poland-soaring-costs-for-dairy-investments-goes-ahead/

Turns out that "liquid gold" may not be gold

Colostrum has earned the unofficial moniker "liquid gold," because of its typically golden color, along with the golden benefits it confers for calf health, growth, and lifetime performance. There's a common misconception that colostrum's gold color is indicative of its quality. That's not necessarily the case, according to Hanne Skovsgaard Pedersen, a veterinarian, researcher, and calf specialist with Denmark-based ColoQuick.

"When I go out on farms, I often hear that we can evaluate colostrum by looking at its color and viscosity." Pedersen stated on a recent colostrum webinar: "But we've learned that there is not a very strong correlation between color, viscosity, and antibody concentration."

Pedersen shared an example of three first-milking colostrum batches harvested the same morning on a single dairy. They ranged in appearance from thick and bright, golden yellow; to relatively thin and nearly white. Evaluation for quality with a Brix refractometer yielded surprising results. The best sample was the thin, white batch, with a Brix reading of 27. The thick, yellow batch showed a Brix reading of 18, while the intermediate-appearing batch scored 21. In this example, true quality was actually the direct inverse of perceived quality by visual assessment alone.

In addition to measuring colostrum quality, Pedersen emphasized timely administration, explaining that the sieve-like permeations in the intestinal wall close rapidly in the hours after birth, so the time window in which antibodies can be distributed into the bloodstream is small.

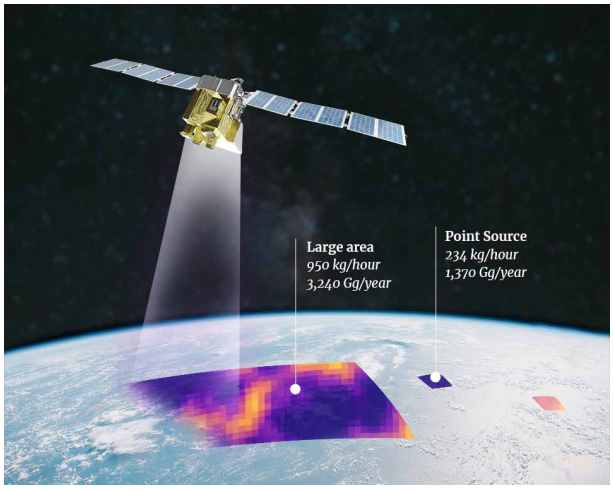
Likewise, heavy bacteria loads can clog that distribution process, so hygienic harvest and handling of colostrum are also critical. Pasteurizing colostrum can help to ensure clean colostrum, but it also can be a cumbersome process. ColoQuick has developed a closed-loop system in which colostrum is pasteurized and frozen in the same liner bag that fits inside a sturdy, plastic cartridge.

Via www.dairyherd.com, 21/03/2024.
https://www.dairyherd.com/news/education/turns-out-liquid-gold-may-not-be-gold-all

Methane: a complicated hunt for hidden emissions

A new satellite has been launched by the team behind MethaneSat, the world's most advanced methane monitoring satellite system.

MethaneSat aims to help by providing an independent source of methane monitoring, with a primary focus on methane leaked from oil and gas fields – such as the recent, months-long mega leak in Kazakhstan,



which resulted in the release of 127,000 tonnes of the potent gas. By supplementing existing satellite data with even more precise measurements, MethaneSat hopes to provide a near-comprehensive view of global leaks.

Yet the oil and gas industry is also far from the only source of human-caused methane emissions. Agriculture is in fact the largest human source of methane emissions, according to the International Energy Agency, at almost 40%. Energy is in second at around 37%, and waste in third.

Within agriculture, flooded rice fields account for 8% of total human-linked emissions, but belches and manure from livestock are the biggest contributors. In California, the non-profit coalition Climate Trace found that one single cattle feedlot produced more methane than the state's biggest oil and gas fields.

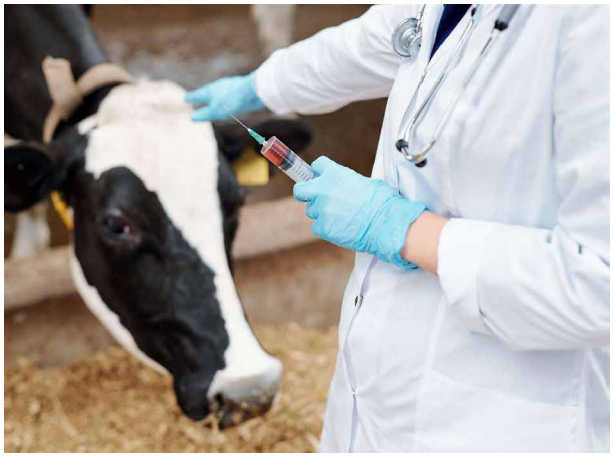
Compared to oil and gas activities, methane emissions from agriculture are more elusive. According to MethaneSat, new satellites could help in this. Thanks to satellites, they can not only track the large emissions events known as 'super-emitters' with great accuracy, but also measure overall emissions at the basin or country level.

According to Sara Mikaloff-Fletcher, who is leading MethaneSat's agricultural research, that capacity will only increase in relation to agriculture too. The new satellite's ability to map methane at a precision of 2 ppb (parts per billion) means it will be the first satellite well suited to measuring agricultural emissions, she says. "That number might not mean a lot to your readers, but to me it is the same precision I could get from an instrument on the ground – which is extraordinary."

There are still technical limitations, however. In terms of methane from livestock, small groups of animals pose problems for satellite monitoring, as do farms in places where agriculture is not the primary emissions source. "I'm also not sure how well we will be able to do sheep, which have smaller emissions than cows," Mikaloff-Fletcher adds.

Via www.bbc.com, 06/03/2024.
https://www.bbc.com/future/article/20240306-agricultural-methane-is-a-climate-action-blind-spot

Human vaccine reduces the spread of bovine tuberculosis by 90 percent



Bovine tuberculosis (TB) results in large economic losses to animal agriculture worldwide. The disease can also transmit to humans and cause severe illness and death. Researchers from Penn State, Addis Ababa University and the University of Cambridge have now demonstrated that a vaccine for TB currently used in humans significantly reduces infectiousness of vaccinated livestock, improving prospects for elimination and control. The study is published in the journal Science.

The spillover of infection from livestock has been estimated to account for about 10% of human tuberculosis cases. While such zoonotic TB (zTB) infections are most commonly associated with gastrointestinal infections related to drinking contaminated milk, zTB can also cause chronic lung infections in humans. Lung disease caused by zTB can be indistinguishable from regular tuberculosis but is more difficult to treat due to natural antibiotic resistance in the cattle bacteria.

In the study, carried out in Ethiopia, the researchers examined the ability of the vaccine, Bacillus Calmette-Guérin (BCG), to directly protect cattle that receive it, as well as to indirectly protect both vac-

cinated and unvaccinated cattle by reducing transmission. They placed vaccinated and unvaccinated animals into enclosures with naturally infected animals in a novel crossover design performed over two years.

"Our study found that BCG vaccination reduces TB transmission in cattle by almost 90%," said Andrew Conlan, associate professor of epidemiology at the University of Cambridge and a corresponding author of the study. "Vaccinated cows also developed significantly fewer visible signs of TB than unvaccinated ones. This suggests that the vaccine not only reduces the progression of the disease, but that if vaccinated animals become infected, they are also substantially less infectious to others."

The team focused their studies in Ethiopia, a country with the largest cattle herd in Africa and a rapidly growing dairy sector. Bovine tuberculosis is a growing burden and and there is currently no control program, it is a representative of similarly situated transitional economies.

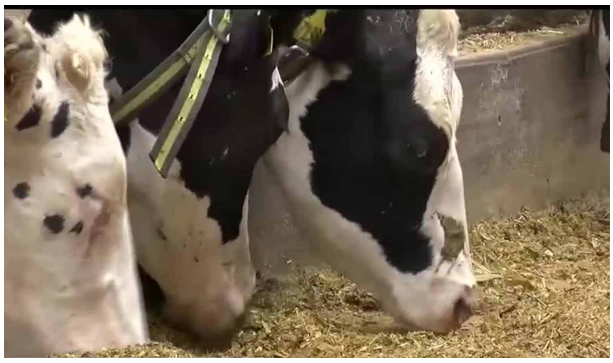
Via www.beefmagazine.com, 01/04/2024
https://www.beefmagazine.com/livestock-management/vaccine-protects-cattle-from-bovine-tuberculosis-may-eliminate-disease

Mysterious cattle disease identified as HPAI in the US

A mysterious disease that has been affecting cattle in the Texas Panhandle has been identified as a strain of highly pathogenic avian influenza (HPAI). Texas Agriculture Commissioner Sid Miller said he received confirmation on March 25 from U.S. Secretary of Agriculture Tom Vilsack and the Animal and Plant Health Inspection Service (APHIS) that the mystery disease has been identified as HPAI.

"This presents yet another hurdle for our agriculture sector in the Texas Panhandle," Miller said. "Protecting Texas producers and the safety of our food supply chain is my top priority." Miller wants to assure consumers that rigorous safety measures and pasteurization protocols ensure that dairy products remain unaffected by HPAI. The Texas dairy industry maintains strict standards to ensure the safety of every product.

Cattle affected by HPAI exhibit flu-like symptoms including fever and thick and discolored milk accompanied by a sharp reduction in milk production. Economic impacts to facilities are ongoing as herds that are greatly impacted may lose up to 40% of their milk production for 7 to 10 days until symptoms subside. It is vital that dairy facilities nationwide practice heightened biosecurity measures to mitigate further spread.



Texas dairies are strongly advised to use all standard biosecurity measures including restricting access to essential personnel only, disinfecting all vehicles entering and leaving premises, isolating affected cattle, and destroying all contaminated milk. Additionally, it is important to clean and disinfect all livestock watering devices and isolate drinking water where it might be contaminated by waterfowl.

"Unlike affected poultry, I foresee there will be no need to depopulate dairy herds," Miller said. "Cattle are expected to fully recover. The Texas Department of Agriculture is committed to providing unwavering support to our dairy industry."

HPAI identified in three dairy farms in Texas and one in Kansas in the last week of March was confirmed in the first week of April, according to the United States Department of Agriculture (USDA), with seven farms in Texas, three in Kansas and two in New Mexico, and one flock in each of Ohio, Idaho and Michigan.

Via www.feedstrategy.com, 25/03/2024
https://www.feedstrategy.com/home/top-story/article/15667203/mysterious-cattle-disease-identified-as-hpai

Israeli project examines benefits of keeping calves for longer with mothers

Keeping calves with their mothers for longer periods after their birth has always been a controversial subject for dairy farmers citing concerns over costs, logistics and practicalities. Those in favour of the move say there are health and welfare benefits for both mother and offspring, as well as possible improvements in milk quality going forward.

An ongoing project in Israel, called Natural Dairy Farming, examines exactly what the practice means in reality as they keep cow and calf together for 3 months. Project leader and veterinarian, Dr Sivan Lacker, said animal welfare can be increased across the board, and profits can be maintained with the potential to increase milk quality. She started the project on a 90-cow farm in northern Israel and is hoping the benefits found can encourage others farmers to try the same.

Traditionally, most dairy farmers all over the world separate the calf from the cow at birth. Cows are typically allowed to lick the calf to help it recover from the birth and get it up on its feet. Calves are then taken to rearing pens to be fed and cared for by the farmer, thus eliminating the chance for any strong bond to form. Traditionally, it has been argued that the more time cow and calf spend together, the deeper the mutual bond and the more intense the stress of being separated can be.

Dr Sivan Lacker says: "In my programme, we let them stay together for about 3 months and then start a gradual weaning protocol, which I developed. Enabling natural behaviour is proven to reduce stress and frustration levels from both the cow and the calf. Stress has a significant influence on health, milk production, milk quality, weight gain and fertility.

"When my system is implemented properly, with the right structural changes, it makes the farmer's life easier and actually reduces working hours. There is no need to move the calf to a new pen, defrost and feed it colostrum, clean its pen every few days, feed it up to 3 times a day, clean and wash out the bottle and bucket after every feeding. By cancelling these management steps, the farmer saves time as all they have to do is supervise and make sure the calf is suckling and gaining weight."

Via www.dairyglobal.net, 04/03/2024.
https://www.dairyglobal.net/dairy/calves/israeli-project-examines-benefits-of-keeping-calves-for-longer-with-mothers/

Understanding the causes of antimicrobial resistance in beef cattle

Researchers at the University of Saskatchewan Western College of Veterinary Medicine (WCVM) are investigating antimicrobial resistance by establishing relationships between antimicrobial resistance genes in beef cattle.

Antimicrobial resistance is a major concern in the cattle industry as the animals develop resistance genes to the various antibiotic drugs, which leads to limited treatment options for livestock producers.

Snyder and her research team began by sequencing the DNA of microbes involved in bovine respiratory disease (BRD) to determine the specific genes that are causing resistance to certain antimicrobials.

BRD, a common disease seen in feedlot animals, is the costliest disease affecting the beef cattle industry. When calves are shipped from their place of origin to a feedlot, the stressful event increases their chances of obtaining an infection. This risk persists when the calves enter the feedlot and mix with other cattle of differing origins and health statuses.

By comparing the DNA sequences from the bacteria causing disease in infected animals, the WCVM scientists hope to determine if there are any direct relationships between their point of origin and/or their exposure to new environments and the resistance genes that they possess during the feeding period.

In this case, the microbes of interest are found in the respiratory tract, which is lined with multiple commensal bacteria (bacteria that don't harm the host) and can interact with each other. The researchers are studying these bacteria and monitoring their changes over time as they're exposed to various antimicrobials and other resistance genes. As these bacteria evolve over time, they obtain different characteristics and will eventually develop different strains — like members of a family that have different identifying characteristics that make them unique.

Snyder's research will target these different characteristics to determine how exposure to different medications affects the bacteria and the genes within them. As the different strains intermingle, they have the potential to pick up more resistance genes. The primary goal of understanding bacterial populations — how they shift with antimicrobial use and how they are related throughout the feeding period of the animals — the research will encapsulate multiple timepoints.

Via www.thecattlesite.com, 25/03/2024
https://www.thecattlesite.com/articles/understanding-the-genetics-behind-antimicrobial-resistance-in-beef-cattle

Beef cell-enriched rice produced in South Korea

South Korean researchers have grown beef cells in rice grains in what they say is a major step towards achieving a sustainable, affordable and environmentally friendly source of protein that could replace farmed cattle for meat.

Professor Jinkee Hong of Yonsei University in Seoul, who led the research published in the journal Matter this month, said the "beef rice" is the first product of its kind. It uses grain particles as the base for cultivating animal muscle and fat cells.

In the research, rice grains were treated with enzymes to create an optimal environment for cell growth, then infused with bovine cells that are cultivated to achieve the final hybrid product, which resembles a pinkish grain of rice.

The Yonsei team is not the first to work on lab-grown meat products. Companies around the world have launched cultivated meat; one of the latest involves plant-based chicken and eel cultivated from a soy base, marketed in Singapore.

Hong's team said rice has an advantage in terms of safety relative to soy or nuts because fewer people are allergic to it.

The beef rice contains approximately 8% more protein and 7% more fat than conventional rice. Hong noted the protein is 18% animal-based, making it a rich source of essential amino acids.

Priced at about $2 per kilogramme and with a far smaller carbon footprint than traditional beef products, cultured beef rice could compete on grocery shelves, Hong said.

Hong said challenges remain from a technical standpoint and in terms of winning over customers with flavour and texture.

Via www.reuters.com, 14/03/2024.
https://www.reuters.com/science/south-korea-scientists-tout-beef-rice-source-protein-future-2024-03-14/

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Gene exchange found to be behind the evolution of deadly avian influenza strain

Through comprehensive analyses of epidemiological, genetic and bird migration data, scientists have found that the dominant genotype replacement of the H5N8 viruses in 2020 contributed to the H5N1 outbreak in the 2021/22 wave. The avian influenza outbreak killed millions of birds across 5 of the 7 continents in 2022. In the first 6 months of that year, more than 69 million farmed birds were culled and 34,000 wild birds died from the virus, though this is likely to be underestimated.

The scientists found that the 2020 outbreak of the H5N8 genotype instead of the G0 genotype produced reassortment opportunities and led to the emergence of a new H5N1 virus with G1's HA and MP genes, causing a significant outbreak in Europe and North America. And through the wild bird migration flyways investigation, the Chinese researchers in their paper published in the journal Journal of Virology found that the temporal-spatial coincidence between the H5N8 G1 virus and the bird autumn migration may have expanded the H5 viral spread, which may be one of the main drivers of the emergence of the 2020-22 H5 panzootic.

Tthe authors say that since 2020, highly pathogenic avian influenza H5 subtype variants of clade 2.3.4.4b have spread across continents, but until now the factors promoting the genesis and spread of the H5 HPAI viruses have been unclear.

But in this research, the scientists found that the spatiotemporal genotype replacement of H5N8 HPAI viruses contributed to the emergence of the H5N1 variant that caused the 2021/23 panzootic. They found that the viral evolution in poultry of Egypt and surrounding area and autumn bird migration from the Russia-Kazakhstan region to Europe are important drivers. These findings, they say, provide important targets for early warning and could help control the current and future HPAI epidemics.

Via www.poultryworld.net, 20/03/2024.
https://www.poultryworld.net/health-nutrition/health/evolution-of-deadly-bird-flu-strain-stems-from-gene-exchanges/

How will Generation Z expectations transform the poultry meat market?

Chicken marketers need to start planning how to future-proof communications with the unique consumer expectations and needs of Generation Z.

"Our future consumer is really forging a new food future. What I mean by that is that they're doing things

differently from their parents in terms of food," Michele Murray, executive vice president, Food Agriculture and Ingredient Practice, Ketchum, said. For example, 68% of Generation Z say they are cooking differently than their parents, with only 20% indicating that the way they ate as kids impacts the way they eat now. "We're seeing a major shift in how this particular target audience, Generation Z is choosing their food, making purchasing decisions and their general attitude about food," she added.

One of the biggest differentiators between Generation Z, born between 1997 and 2012, and previous generations is that there is a large part of this demographic that considers themselves food evangelists. This is likely due to their lifelong exposure to social media and the internet. "When we first identified this as a consumer segment back more than 10 years ago, 22% of the overall population fit into that food evangelist category," Murray explained. "But for Generation Z, we found that over half describe themselves as food evangelists." In other words, this demographic is highly interested in understanding more about food and sharing that food story with the people around them.

Generation Z is also highly value-driven when it comes to the food they purchase in terms of the environment. They also believe their food choices say something about them – from sustainability to body issues and even when it comes to certain political issues. They feel the weight of the world to make certain decisions about food and are judged by society. These are certainly aspects that cannot be ignored in the market communication of chicken meat towards a consumer segment that will soon represent a significant purchasing power.

Via wattpoultry.com, 28/03/2024.
https://www.wattagnet.com/poultry-future/chicken-marketing-summit-news/article/15667475/generation-z-will-transform-how-chicken-is-marketed

Targeting high-virulent serotypes could reduce Salmonella

Reducing levels of high-risk Salmonella serotypes in raw poultry parts could help improve public health and reduce salmonellosis cases, according to a new risk assessment from the University of Illinois at Urbana-Champaign.

Our assessment shows that most of the risk in raw poultry products can likely be found in a few poultry parts that have relatively high levels of Salmonella and probably high-virulent serotypes, explained Matthew Stasiewicz, Associate Professor of Applied Food Safety of the university. According to Stasiewicz, using Salmonella risk management strategies that target high levels of high-virulent serotypes would help the industry manage the Salmonella risk in finished products by reducing the highest risk outcomes.

Additionally, the study supports the idea that managing low-virulent serotypes would limit improvements in public health. This is important, he explained, because regulatory policies focused on Salmonella prevalence only could encourage reductions of low-virulent Salmonella, which could have no effect or may potentially increase high-virulent serotypes.

Public data shows that high-levels of high-virulent serotypes are rare in finished chicken parts, however, this risk assessment suggests that much of the public health risk from chicken parts is concentrated in those rare products with a high prevalence of high-virulent serotypes, he said. While Stasiewicz did not recommend any specific interventions for producers, he did suggest that processors focus on reducing high levels of high-virulent strains in poultry parts versus solely prevalence.

Via wattpoultry.com, 28/03/2024.
https://www.wattagnet.com/broilers-turkeys/food-safety/article/15667516/targeting-highvirulent-serotypes-could-reduce-salmonella

Supporting coccidiosis-challenged broiler chickens through nutrition

When broiler chickens are busy fighting the parasitic infection coccidiosis, they can't absorb nutrients efficiently or put energy toward growth. In addition to traditional medicine, new research from the University of Illinois Urbana-Champaign suggests diet changes might help.

In the experiment, described in a study published in the journal Poultry Science, the university research team the research team induced coccidiosis, and then altered the diet to understand the roles of various ingredients. The team adjusted the starch, oil, and amino acid content of the classic broiler diet and monitored body weight gain and feed conversion ratio.

"If you visualize a triangle, the three points represent diets with the highest starch, oil, and amino acid content," doctoral student Julianna Jespersen explained. "We used varying proportions of those three ingredients to mix 10 experimental diets, one being a control diet with an equal proportion of each ingredient."

The optimal diet mix — the diet leading to the highest body weight gain in coccidiosis-challenged birds — consisted of 35.8% starch, 8.9% oil, and 101.3% of recommended amino acids relative to the control diet.

The researchers acknowledge 9% oil inclusion is well above practical levels for the industry. "That level of oil is going to be hard for producers to fathom. But previous research from our lab has shown this parasite reduces lipid absorption in the gastrointestinal tract, so the birds can't get as much energy or lipid components out of the diet," said senior study author Ryan Dilger. The researchers acknowledge 9% oil inclusion is well above practical levels for the industry. Producers might look at that and laugh, but the bird is telling us why it should be that high for optimizing outcomes in disease-challenged birds."

Jespersen says although it may not be feasible to include oil at 9%, the results show that increasing oil to any level above the usual 1% should be beneficial.

Via www.thepoultrysite.com, 13/03/2024
https://www.thepoultrysite.com/articles/illinois-study-supporting-disease-challenged-broiler-chickens-through-nutrition

France makes progress on avian flu vaccination

So far, around one-third of French commercial ducks has received at least one dose of highly pathogenic avian influenza (HPAI) vaccine. The latest update from the agriculture ministry puts the number of commercial ducks that have received their first dose

of H5N1 HPAI vaccine at more than 21.6 million (as of March 4). This is three million more than it reported on February 12.

All mainland regions of France have now begun vaccination of commercial ducks, according to the national policy. Carrying out the most vaccinations so far have been the western and southwestern regions of Pays de Loire, Nouvelle Aquitaine, and Occitanie.

Following several waves of HPAI in recent years that have devastated the nation's duck sector in particular, France decided to begin vaccination of commercial ducks in October of last year. Target number of ducks was 64 million, covering the main species, in flocks of medium and large size, and producing products that were not intended for export.

Despite the latter pledge and the progress made, France has suffered a backlash from international markets over its decision to carry out the vaccination program.

Between November of last year and mid-January, 10 HPAI outbreaks in French poultry flocks were confirmed by the ministry. All were linked to the H5N1 HPAI virus serotype. Just three of the outbreaks involved ducks, while the other affected six flocks of turkeys, and one of laying hens.

In late February, the authorities officially declared the outbreak "resolved" to the World Organisation for Animal Health (WOAH).

Via www.wattpoultry.com, 08/03/2024.
https://www.wattagnet.com/poultry-meat/diseases-health/avian-influenza/article/15665918/france-makes-progress-on-avian-flu-vaccination

3 days longer incubation makes a big difference

With SetCare, the new setter developed by HatchTech Incubation Technology, eggs are incubated for 24 days instead of the traditional 21 days. This results in 3% lower embryo mortality, which automatically means an improved hatching performance. The chicks that hatch will demonstrate an overall improved chick quality.

SetCare builds on HatchTech's years of research into the beginning of the incubation period, in which embryo mortality is relatively high. This has long been accepted as an inevitable part of incubation, but a more in-depth research and a closer look at the natural incubation process, reveals that the industry-standard of a 21-day incubation process is sub-optimal. A 24-day incubation process with a more gradual increase in egg temperature is needed to help embryo cells to survive and to achieve the best hatch result.

"SetCare suits our promise to deliver superior chick quality" states Joost Ter Heerdt, Commercial Director of HatchTech Group. "SetCare reduces embryo mortality, resulting in an increase of hatchability by at least 3%. Also, overall the number of 1st grade chicks increases, as do average chick length and quality, and improved FCR while a smaller hatching window ensures higher uniformity."

The unique precision-control set-up of SetCare incubation environment enables a consistent extremely slow warming process (+0,1 °C per hour). Combined with carefully controlled humidity and CO2 levels, this provides a uniform and optimal incubation environment both for layer and broiler eggs.

Via www.thepoultrysite.com, 29/03/2024
https://www.thepoultrysite.com/news/2024/03/optimal-incubation-takes-24-days

Russia seems to be over the poultry crisis

Russian authorities have managed to bring the domestic poultry and egg market back in balance using the carrot of generous state support measures and a stick of antimonopoly investigations, according to officials.

Recently, the average wholesale price of broiler meat on the Russian market decreased by 0.1% to 157 roubles (US$1.73) per kg. The average wholesale price of a pack of 10 eggs dropped by 1.3% to 89.7 roubles (US$0.99), the Russian Agricultural Ministry said in a statement. The price dynamics have remained predominately flat since January 2024, following unprecedented turbulence in the second half of 2023. The occasional shortage of broiler meat on the shelves, seen in some regions in September 2023 and January 2024, is no longer occuring.

At the end of 2023, the Russian government adopted a decree allowing Russian regional authorities to take steps to lower poultry and egg prices. Maxim Shaskolsky, head of the Russian Federal Antimonopoly Service said that at the time of the meeting 34 regions utilised this tool, signing agreements with 2,200 food manufacturers, under which they promised to constrain the rise in wholesale prices in exchange for certain benefits. In addition, the authorities' investigation revealed that in particular cases, the upward price dynamics were not justified by a corresponding growth in production costs or change in business marginality. In total, FAS kicked off 10 cases against Russian poultry and egg manufacturers for breaking antimonopoly law, Shaskolsky disclosed, not providing further details.

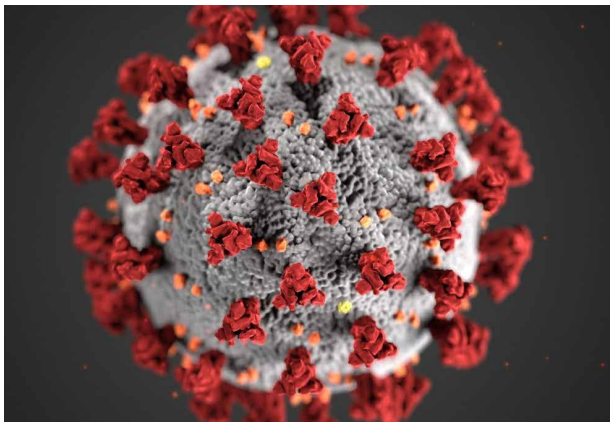
Thanks to generous state aid, Russia is on track to expand egg and poultry production in 2024, Maxim Uvaidov, deputy head of the Russian Agricultural Ministry, said during a recent parliament session. He said 51 egg farms are due to expand egg production in total, thanks to bank loans with subsidised interest rates. In 2023, Russian egg production reached 46.6 billion units, adding 1.2% to the 2022 level, Uvaidov said.

Via poultryworld.net, 22/03/2024
https://www.poultryworld.net/the-industrymarkets/market-trends-analysis-the-industrymarkets-2/russia-has-seemingly-overcome-the-poultry-crisis/

Challenges of using RNA vaccines in poultry

Ribonucleic acid (RNA) vaccines could provide a breakthrough in vaccine technology and offer a rapid response to pathogens in the poultry industry. Unlike conventional vaccines or vector vaccines, RNA vaccines, which together with DNA vaccines are classed as nucleic acid vaccines, utilize a small piece of the pathogen's genetic material to prompt an immune response.

Poultry producers and veterinarians are facing challenges in launching RNA vaccines into the industry.



Among those challenges is the licensing process that RNA vaccinations must be approved through.

"It currently takes a range of 3-7 years to license a poultry vaccine. If a platform license is first attained for RNA technology through U.S. Department of Agriculture (USDA) licensing, then adaptations in vaccines to the field can now take weeks to months rather than years," explained John El-Attrache, Ph.D., Ceva Animal Health Global Director of Science and Innovation at the 2023 Poultry Tech Summit.

When creating RNA vaccines, developers must take the genetic sequence from an isolated event.

"To conduct integrated RNA vaccine development, companies need producers to provide vaccine developers with samples and farm information so that clinical and disease diagnostics can be performed. However, it is critical that the information is collected in a standardized manner," explained El-Attrache.

The analysis of metadata is a tool that can support the production of an RNA vaccine, however, it can be difficult for productions managers to collect that data on the farm. "In order for us to obtain metadata we have to make it easy for the production manager and the veterinarian to get the information to put it into an application," El-Attrache stated.

"Production veterinarians are well attuned to the differences between the various vaccine types and know how to utilize them to optimize the balance between safety and efficacy. RNA vaccines will become another tool available that further optimizes this balance" he said.

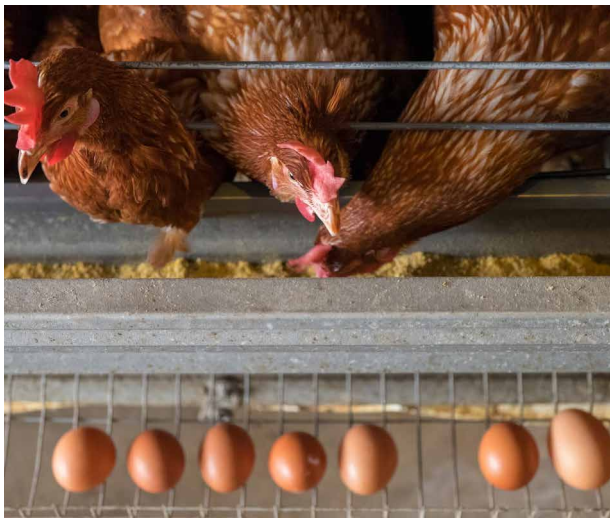
El-Attrache believes that future poultry vaccines will consist of all three types of vaccines and that technologies such as whole genome sequence analysis and artificial intelligence will help the industry produce safer and more efficacious vaccines.

Via www.wattpoultry.com, 12/03/2024
https://www.wattagnet.com/poultry-future/poultry-tech-summit-news/article/15666167/the-challenges-of-implementing-rna-vaccines-in-poultry

New phytogens validated as safe for gut health of layers and pullets

Feeding saponins and polyphenols made from plant products, also known as phytogenics, to pullets and layer hens has no negative effect on performance or egg quality, revealed a validation study conducted at North Carolina State University (NCSU). Recent research suggests that phytogenic feed additives can help improve poultry gut health, protecting against a variety of diseases. In particular, the combination of these saponins and polyphenols made from Quillaja saponaria and Yucca schidigera biomass are beneficial against coccidiosis and necrotic enteritis infections.

The results revealed that birds in the pullet phase given the phytogenic feed additive consumed less feed and had equal body weights compared to the control group. "We don't know why because we didn't look at intestinal histology, but we think it's because the intestine is better able to absorb the nutrients they need," explained Dimitri Malheiros at the 2024 International Poultry Scientific Forum (IPSF).



In addition, there were no statistical differences observed in performance or egg size, grade or quality for the laying hens compared to the control group. Malheiros noted that the hens in this study were unchallenged, meaning that the birds were not purposefully exposed to coccidiosis or any other diseases. "I would really like to see this trial done at scale with a challenge imposed," he added.

Via www.wattpoultry.com, 29/03/2024
https://www.wattagnet.com/broilers-turkeys/nutrition-feed/article/15667596/phytogenics-safe-to-feed-layers-pullets-for-gut-health

Active walking in broiler chickens – a flagship for good welfare

Automated assessment of broiler chicken welfare poses particular problems due to the huge number of birds involved and the range of different welfare measures currently being proposed.

Smart technology is increasingly being used to monitor and manage the keeping of farm animals and has the potential to improve both efficiency and animal welfare. Use of smart technology is particularly advanced in the dairy sector, where automated monitoring has contributed to animal welfare by enabling each animal to have its own individualised diet and medical treatment.

The use of smart technology is not yet as widespread in the broiler sector, since the economic value of each bird is small compared to the overall enterprise.

Professor Marian Dawkins from the Department of Biology at the University of Oxford and author of a scientific paper on "active walking" published in the journal Frontiers of Veterinary Science explains that when measuring welfare properties, two requirements must be met. On the one hand, a universally accepted point of view must be taken, in which there is a consensus that it is a major and necessary component of chicken welfare. On the other hand, it should be distinctive enough to pose minimal technological problems for recognition in large flocks on commercial farms.

According to the researcher, the behaviour that fits both these requirements is 'active walking'. Active or sustained walking (where a bird walks continuously and with regular strides for a specific time) is not a complete measure of everything that everyone might want to include in the definition but it is a sign of a healthy bird and is linked to many other components of good welfare, according to Dawkins.

It is also distinctive and relatively easy for a machine to recognise. "It is therefore ideally suited as a starting point for automated welfare recognition, a foundation to which more welfare measures can later be added as our future knowledge base grows and more sophisticated analytic techniques become more widely adopted."

Via poultryworld.net, 13/03/2024
https://www.poultryworld.net/poultry/broilers/active-walking-in-broiler-chickens-a-flagship-for-good-welfare/

Blood biomarkers could drive broiler nutrition decisions

Artificial intelligence (AI) and machine learning could analyze poultry blood biomarkers to detect potential performance and health challenges, leading to more proactive, data-driven decisions about bird nutrition.

"This technology uses machine learning to take all the data that's collected – not just blood data, but also

seasonality, the breed, the sex of the bird and other metrics – and feed it into the neural network technology that makes predictions and then beyond that even prescriptive type of diagnostics," explained Matthew Livingston, Verax business development manager, dsm-firmenich.

Machine learning and AI can monitor trends and changes in blood biomarker levels, which serve as an early indicator of potential diseases of the bird. Examples of blood biomarkers include calcium, sodium chloride, protein, hemoglobin, etc.

The neural network learns on a model or blood biomarker dataset, it can then highlight and even predict when indicators of broiler health issues nutritional deficiencies start to appear in a flock in real-time. The technology can also recommend nutritional strategies to help manage bird health based on that data.

Producers can use this early warning system to proactively make feed and other management changes to prevent outbreaks before they start.

"In an ideal world, we do this about four times a year. We do know that we have seasonality differences, especially with thins like electrolytes and heat stress," Livingston said. "The machine will show us the pattern. It may be things that are obvious, but there's always a handful of things that we didn't even think of logically."

Via www.wattagnet.com, 07/03/2024
https://www.wattagnet.com/broilers-turkeys/nutrition-feed/news/15665898/blood-biomarkers-could-drive-broiler-nutrition-decisions

Baromfi Világnap – milyen lesz a jövő csirkéje?

Szakmai konferenciát rendezett május 16-án a Baromfi Világnap alkalmából a Baromfi Termék Tanács és Szakmaközi Szervezet és a Baromfi- és Tojástermelők Szövetsége. Az eseménynek a budapesti Vajdahunyad vára adott otthont.

Az eseményen köszöntőt mondott Nagy István agrárminiszter és Győrffy Balázs, a Nemzeti Agrárgazdasági Kamara elnöke. Az eseményen részt vett Birthe Steenberg, az Európai Baromfifeldolgozók és -kereskedők Szövetségének főtitkára, aki az európai baromfihús-előállítás legfontosabb kérdéseiről tartott előadást. Emellett a konferencián előadás hangzott el a jövő csirkéjéről, a baromfiágazat helyzetéről és a magyarországi járványvédelemről.

Az Agrofeed Kft. kiemelt támogatásával ebben az évben is hozzájárult a konferencia sikeres lebonyolításához.

PRRS diagnostics is not always obvious

When it comes to porcine respiratory and reproductive syndrome (PRRS), high sow death rates, abortion storms and poor nursery performance grab the headlines. But less familiar are milder cases and even those where a positive test is hard to find. Bottom line, there are many PRRS virus strains, and a strain can behave differently in different settings.

Daniel Gascho, veterinarian at the Four Star Veterinary Service in the US, presented a case study on thepigsite.com. The farm was a recent start-up that was negative for typical pathogens of concern and maintained high-health status. Farm personnel reported an increase in abortions to Gascho, who had them send in recently aborted fetuses and placentas, as he was unable to reach the farm that day for more thorough diagnostics. However, those tests came back negative for PRRS. When Gascho finally made it to the farm to take blood samples from the affected animals, all tests were again negative. The abortion rate was running about 20% across all gestation groups. The farm was on its fifth round of diagnostics when Gascho happened to be on-site when a sow aborted,

and he collected a blood sample from her within the hour. It finally tested positive for PRRS. "We did not find a single other positive on the farm," he noted. The only other place it was identified was in one group of weaned pigs from a down-stream nursery that produced a 100% match.

From that single positive test, the farm began the elimination process, as it was able to hold enough gilts on-site to close the herd for 6 or more months, if needed. Even though weaned pigs had tested negative from the beginning, the farm monitored processing fluids and weaned-pig serology during the elimination period. To date there have been no PRRS-positive tests. His take-home message: "If we wouldn't have dug deep and finally gotten proof that it was PRRS, it's unlikely we would have taken the time to undergo an elimination protocol, and I suspect the abortions would have lingered and we would have been left with sub-par health," he added.

Via www.thepigsite.com, 27/03/2024
https://www.thepigsite.com/articles/prrs-diagnostics-not-always-straightforward

What do the global mycotoxin survey figures show?

Analysis of global pig feed conducted by the Alltech 37+ analytical laboratory reveals the ubiquitous nature of these unwanted contaminants. 100% of samples contained mycotoxins, with an average of 8.1 mycotoxins per sample (284 samples, June 2023 to January 2024). The presence of these mycotoxins in feed can have negative effects on the growth, feed intake, feed efficiency, gut health and immunity of pigs. We typically associate animal impacts with higher concentrations of mycotoxins, i.e. those above regulatory

guidelines, but a growing body of literature is showing that lower or chronic levels of mycotoxins can also have negative effects.

In the set of pig feeds referenced above, although 91% of samples contained deoxynivalenol (DON), 91% of these had concentrations under the EU regulatory guidelines for pigs of 900 ppb. Equally, 64% of these feed samples contained fumonisins, with 99% falling under EU guidelines of 5 ppm. This demonstrates that not only is the presence of mycotoxins likely, but lower concentrations that are consumed over longer periods of time are probable.

Despite the ever-present challenge of mycotoxins, there are various management strategies from field to feed that can help to minimise mycotoxin risk. One management method that can directly protect the animal from mycotoxins is the use of a nutritional solution such as yeast cell wall extract (YCWE), a product rich in complex insoluble carbohydrates that can bind mycotoxins in vitro, ex vivo, and in vivo. This meta-analysis evaluated the effect of YCWE use during mycotoxin challenges, based on data collected from 23 studies (30 different treatments) carried out over 20 years (2002–2022) and from 10 different countries.

This meta-analysis with meta-regression highlights clearly that mycotoxin consumption by pigs at levels both below and above regulatory guidelines could negatively affect the growth performance of pigs. As many samples tested for mycotoxins contain lower levels or levels below advisory limits, it is particularly important to realize that pig growth and health can still be impacted even at these so-called safer levels.

Via www.allaboutfeed.net, 03/04/2024
https://www.allaboutfeed.net/all-about/mycotoxins/understanding-mycotoxin-presence-in-pig-feeds/

Positive effects of tributyrin supplementation as functional feed additive

Matteo Dell'Anno, a student at the University of Milan, Faculty of Veterinary Medicine, focused his PhD thesis on the supplementation of pig feed with tributyrin as a functional feed additive as an alternative to antibiotics. He evaluated its effects on performance, health, serum metabolites and gut microbiota in post-weaning piglets.

In his experiment one hundred and twenty piglets were divided into two experimental groups (10 animals/pen; 6 pens/group) fed with commercial diet for control group, and commercial diet supplemented with 0.2% of tributyrin in the treatment group for 40 days. Body weight and feed refuse were measured at days 0, 14, 28 and 40 for the calculation of zootechnical performance. Blood and faeces were collected for the evaluation of principal serum metabolites and faecal volatile fatty acids concentration and faecal microbiota trough 16S rRNA gene amplification and sequencing.

Tributyrin supplementation significantly increased the body weight after 40 days of trial (20.10±1.04 kg in control group and 23.20±1.04 in treatment group). Albumin and glucose concentrations were higher in the treatment group compared to control group. Volatile fatty acids profile in faecal samples showed higher concentrations of isobutyrate indicating enhanced dietary protein catabolism by bacteria. Beta diversity index showed a significant difference after 40 days of trial observing separate clustering of control and treatment groups. The functional profile prediction of microbiota showed an enhanced potential for energy metabolism in the treatment group.

The supplementation of tributyrin could be considered a valuable functional feed additive for improving performance, metabolic status and gut microbiota modulation in weaned piglets.

Via www.pig333.com, 07/03/2024
https://www.pig333.com/swine_abstracts/tributyrin-positively-impacts-weaned-piglet-growth-and-gut-microbiota_20013/

Brazilian pork exports exploding

The United States Department of Agriculture (USDA) projected the Brazilian pork production at 4.68 million tonnes in 2024. This is a 4% increase compared to 2023. According to USDA this is due to an increase in slaughter, a reduction in food costs, and investments aimed at increasing production, accordingo to the agency. Despite this growth, the projection is below the previous forecast (4.88 million tonnes) due to concerns about feed prices, availability, and economic conditions.

As for exports, a growth of 6% is expected in 2024 compared to the previous year, totaling 1.5 million tons, which means 32% of all production. This forecast is based on increased pork availability, strong global demand, increased purchases from new markets, and expanded exports to existing consumers. As mentioned in the USDA report, Brazil's favourable health status compared to its competitors, especially in Europe, gives it an advantage.

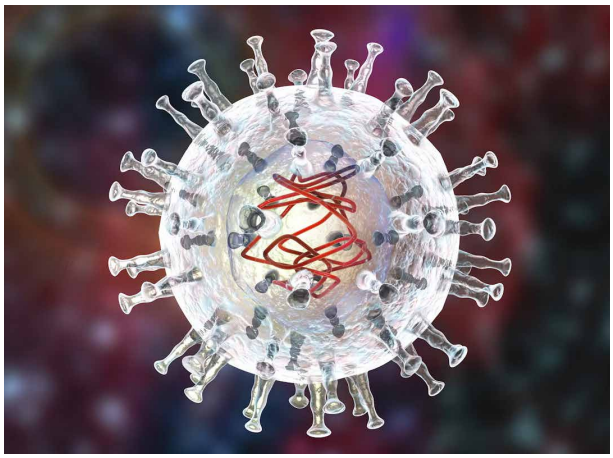
According to official data from the USDA, China will import 2.25 million tons of pork in 2024. Last year, Brazil overtook Spain and became the largest pig exporter to the Asian country.

Via www.pigprogress.net, 04/04/2024
https://www.pigprogress.net/the-industrymarkets/market-trends-analysis-the-industrymarkets-2/usda-forecasts-6-increase-of-brazilian-pig-export-in-2024/

Gene linked to recovery from ASF identified

Researchers from the Swedish University of Agricultural Sciences and The Pirbright Institute say they have identified a gene that appears to help pigs recover from infection with African swine fever (ASF) — and could potentially be used to breed more resilient livestock.

According to a paper published in Scientific Reports, researchers infected 17 pigs — all specially inbred to have minimal genetic variation that might interfere with scientific experiments — with a severely virulent strain of the African swine fever virus. Although all 17 pigs were genetically similar, the handful that survived the infection had a small mutation in a single gene, called ACOX3. This gene may regulate how other genes interact with the virus and could confer some resilience against ASF.



Beyond the need to validate their preliminary results, Dirk-Jan de Koning, a professor in animal breeding at the Swedish University of Agricultural Sciences said researchers still need to determine whether breeding for the mutation could lead to unwanted side effects. The genes of interest are linked to increased sensitivity to heat stress and an increased incidence of certain kinds of cancers in other species, he said, but there is little available research about what they do in swine.

So while it is possible that the gene could lead to breeding or even gene editing swine for greater resilience against ASF, Koning said the science still has a long way to go to get to that point.

The surviving pigs in the study, Koning said, had also received a dose of an experimental vaccine against ASF before researchers infected them with the virus. Attempts to develop an ASF vaccine have proven hit-and-miss at best. But while the pigs in the study fell ill, those with the ACOX3 mutation survived the disease. That finding, Koning said, could eventually tell us more about how vaccines trigger immunity, which could lead to developing a better vaccine for ASF or to breeding animals that respond more favorably to vaccines.

"We are starting to lift the lid on potential gene or gene processes that may be related to recovering from infection after being immunized," he said.

Via www.feedstrategy.com, 18/03/2024
https://www.feedstrategy.com/animal-health-veterinary/article/15666509/study-identifies-gene-associated-with-recovery-from-asf

Soybean meal can mitigate respiratory disease effects on pig performance

Soybean meal (SBM) has long played a role in swine diets as an efficient amino acid and energy source. Increasingly, research is revealing its health-boosting properties due to an abundance of functional molecules and bioactive peptides that occur during digestion. R. Dean Boyd, PhD, was involved in the first study (2010) that illustrated the positive effects of SBM on growing pigs encountering swine respiratory disease (SRD) complex. The researcher now reports the latest results on thepigsite.com.

"During a research project evaluating low-SBM (typical) and high-SBM (38% to 50%) diets on growing pigs, the animals encountered … We elected to focus on SRD because SRD infections can be active six to seven months of the year" said Boyd.

"The results showed that pigs receiving the low-SBM diet exhibited a profound loss in average daily gain (ADG) and feed conversion rate (FCR), which is common during periods of high immune stress. The high-SBM pigs grew as if no active infection was present.

More specifically, FCR was 0.28 points and ADG was 0.17 points worse in pigs receiving the low-SBM diet compared with the high-SBM pigs. The 0.28 point spread in FCR is a key measure in estimating feed costs for unchecked respiratory disease stress. During the three-week SRD infection, the high-SBM diets improved carcass weight gain by 1.72 kg per pig and provided significant feed savings.

The researcher propose that SBM should be a nutritional and 'prescriptive' ingredient during an SRD infection in a commercial production system. Prescriptive meaning that SBM is a credible, tactical option for respiratory disease mitigation in pigs. Increasing dietary SBM above typical levels mitigates FCR and ADG loss during an SRD infection. Therefore, it's worth considering making seasonal dietary changes to match respiratory challenges that you are seeing in a particular pig flow.

Via www.thepigsite.com, 28/02/2024
https://www.thepigsite.com/articles/soybean-meal-can-mitigate-respiratory-disease-impact-on-pig-performance

Welfare issues resulting from feed restriction in pregnant sows

According to Council Directive 98/58/EC (1998) animals must be fed a diet that is appropriate to fulfil their physiological needs. However, pregnant sows are generally fed at a restricted level to avoid a high body condition score and the risk of farrowing problems.

With a review, EURCAW-Pigs aims to support inspectors of EU member states in understanding the science and regulations related to pig welfare concerning hunger induced aggression and stereotypies. Underlying mechanisms and causes of these behaviours in sows related to hunger are described. Furthermore, measures to reduce welfare risks related to aggression and stereotypies are discussed followed by suggestions how to measure these behaviours.

Restricted feeding of sows results in behavioural and physiological signs of hunger, including increased competition for access to feed (aggression) and an increase in stereotypic oral behaviours. Competition over feed may be reinforced by several management and housing conditions that are described in the review. Hunger leads to frustration, that may develop into stereotypies.

Inspectors can measure aggression directly, by observing behaviour, and indirectly, by assessing the resulting skin lesions. Stereotypic behaviours can be observed based on so called 'ethograms' which describe the different types of stereotypies.

There are several ways to reduce the welfare issues resulting from feed restriction. They divide into possibilities to reduce the underlying problem of hunger and those to mitigate the resulting aggression and stereotypies. To reduce the root cause of the problem, sows need to feel more satiated during gestation which can be achieved by e.g. a higher content of fibre in the diet. Possibilities to mitigate aggression and stereotypies relate to aspects of housing such as space, flooring, substrates, feeding system, and complexity of the environment.

Via www.thepigsite.com, 26/02/2024
https://www.thepigsite.com/articles/welfare-issues-resulting-from-feed-restriction-in-pregnant-sows

Russia launches Meat Shuttle targeting Southeast Asia

The Russian government and logistics firm FESCO have launched a 'Meat Shuttle'. This is a railway service for the delivery of perishable products in refrige-

rated containers from Russia to China and countries of Southeast Asia. The new route will boost the export potential of the Russian pig industry in the Asian direction.

The service will utilise FESCO-operated intermodal and shipping routes via the ports of Vladivostok and St. Petersburg as well as via land border crossing points. The Meat Shuttle will give Russian meat companies an opportunity to send their products to China and the countries of Southeast Asia as part of a single end-to-end transportation without changing the refrigerated container along the entire route, according to the Russian export centre, a government agency authorised to facilitate export.

The new transport route will also save delivery time due to the absence of overload at intermediate points. Meat Shuttle clients will be eligible for reimbursement of up to 25% of transportation costs under the Russian state support programme for the transportation of agricultural products, the Export Center unveiled.

"I believe that given the opening of the Chinese pork market, the Meat Shuttle will be in great demand among Russian exporters of meat products and will allow them to occupy a serious niche in the target market" said Veronika Nikishina, general director of the Export Center.

> Via www.pigprogress.net, 28/03/2024.
> https://www.pigprogress.net/the-industrymarkets/market-trends-analysis-the-industrymarkets-2/russia-launches-meat-shuttle-to-facilitate-pork-export-to-southeast-asia/

German pig population down by 15 percent in three years

Germany's Federal Statistical Office published the results of its Agricultural Structure Survey 2023 in a press release. The survey is carried out every three to four years. In contrast to the semi-annual livestock counts, smaller farms with less than 50 pigs or less than 10 breeding sows are also included in the survey.

According to the final results of the Agricultural Structure Survey 2023 of the Federal Statistical Office (Destatis), 27,600 companies in Germany held on the 1st March 2023 a total of 22.4 million pigs. Three years earlier, there were still 31,900 farms with 26.3 million pigs. Within three years, the number of farms with pig farming decreased by 4,300 or 13%.

The pig population decreased by 15% from 2020 to 2023, the average number of animals per farm fell from 826 to 810 animals. The number of sow-holding farms increased by 21% within three years to 7,070. The breeding sow population decreased by 19% to 1.4 million animals.

"The results of the agricultural structure survey published yesterday confirm the findings that we have already gained from the semi-annual livestock censuses," ISN, the interest group for German pigkeepers said. "With the multi-crisis since 2020, there has been a real structural break in pig farming and especially in piglet production. But even at the moment, many pig farmers continue to be critical of the future, although the economic situation has now improved significantly again."

"The main reasons for the dissatisfaction - namely the lack of planning security and the increasing bureaucracy - must be urgently addressed by the Federal Government," ISN concluded.

> Via www.thepigsite.com, 29/03/2024
> https://www.thepigsite.com/news/2024/03/german-pig-population-decreases-15-in-three-years

Hydrolysable tannins reduce pork lipid oxidation

Tannins are phenolic compounds ubiquitous in the vegetable kingdom with antioxidant and antimicrobial activities. Dietary tannins are used to treat post-weaning diarrhoea and nematode parasitism. They also improve gut health. Tannins have no negative impact on pig performance; however, their impact on pork quality remains unknown.

A team of Italian researchers recently evaluated the effect of dietary hydrolysable tannins on performance and pork quality of finishers. The research team selected 20 crossbred PIC × Piétrain barrows for this study that lasted 56 days. They randomly assigned the pigs to control and hydrolysable tannins groups. The control group received a commercial pelleted diet for finishing pigs. The experimental group received a commercial pelleted diet supplemented with 11.5 g/kg of commercial hydrolysable tannin extract.

Dietary supplementation of hydrolysable tannins had no detrimental effects on average daily gain, final bodyweight, carcass weight and yield, muscle pH, and meat cooking loss. Furthermore, the antinutritional effect of tannins could be counterbalanced by their positive effect on gut health.

Dietary supplementation of hydrolysable tannins did not affect backfat and pork color stability. Pork samples tended to be slightly darker which would hardly have any effect on consumer acceptance. In addition, feeding pigs with hydrolysable tannins had a positive effect on pork lipid stability due to their antioxidant activity.

The authors concluded that supplementing finishing pigs' diet with hydrolysable tannins reduced lipid oxidation in pork with no negative impacts on the organoleptic quality of pork and pig performance.

Via www.pigprogress.net, 15/03/2024
https://www.pigprogress.net/article/hydrolysable-tannins-reduce-pork-lipid-oxidation/

How could the Chinese pork market evolve in 2024?

Swine and pork production in 2024 will be marginally down as persistently low live hog and pork prices weigh on producers, according to USDA forecast. Pork imports may grow marginally to offset the forecasted decline in domestic pork production.

In 2024, China is expected to produce 695 million head with a year-on-year decline of 3% due to a lower

sow inventory in 2023 compared to 2022. Herd liquidation as a result of low swine and pork prices and lingering animal diseases in 2023 are the two major reasons for the lower sow inventory.

Similarly, pork production is forecast to decline 3% in 2024 from fewer slaughters and lower inventory and slaughter weight of fattened swine. Likewise, pork consumption in 2024 is expected to reach 57.8 million tonnes, with a decline of 3% year-on-year. Although pork is a staple meat in China, demand for pork products has decreased as the economy continues facing challenges in 2024.

Pork imports in 2024 are expected to grow marginally at 1.95 million tonnes as imports offset the decline in domestic pork production. High year-end inventories carried over into 2024 will suppress imports until traders diminish their supplies. China's major pork suppliers are Spain, Brazil, Denmark, the Netherlands, Canada, and the United States.

Via www.pig333.com, 14/03/2024.
https://www.pig333.com/latest_swine_news/usda-forecasts-for-chinas-pork-production-and-trade-in-2024_20159/

Az antibiotikum-használat csökkentését előíró rendelkezés nem azért született, hogy az állattartókat tönkre tegye

Május 7-én az Állatorvostudományi Egyetemen került sor az „Együttműködésben a hazai antimikrobiális rezisztencia csökkentéséért" című konferenciára. Ezen dr. Gombos László, az Agrofeed Kft. sertésegészségügyi szakállatorvosa a hazai helyzetről és a sertéságazatban már ismert és alkalmazott, a NÉBIH adatfeltöltő rendszerével kompatibilis AB Kontroll nyilvántartási rendszerről tartott előadást.

Az előadó elmondta, hogy már 2019-ben összeállított egy, az antibiotikum használat nyomon követésére hivatott rendszert, de az elemzések komplex jellege miatt a gyakorlatban egy hatékonyabb megoldásra volt szükség.

A továbblépéshez nélkülözhetetlen volt, hogy az Agrofeed Kft. és a Magyar Sertésegészségügyi Társaság is a kezdeményezés mögé álljon. Előbbivel egy olyan online rendszert alakítottak ki, az AB Kontrollt, amely lemodellezi az antibiotikum-csökkentés folyamatát olyan módon, ami értelmezhető a sertéstelepeken dolgozók és az állatorvosok számára egyaránt. Egy egyszerűen és hatékonyan használható segítséget jelent a jogszabályi kötelezettségek teljesítése és a telepi állategészségügyi helyzet monitorozása érdekében.

A szakember azt javasolta, hogy minden telep legalább havi szinten gyűjtse össze a szükséges információkat, bár időnként előfordulhat, hogy hónap közben is történnek olyan események, amiket összegezni érdemes. Az AB Kontroll mindkét esetben nagy segítséget jelent, mind az adatok tárolásában mind az elemzésében.

A szoftver képes olyan riportok generálására, ami érhető formában bemutatja egy-egy telep helyzetét az antibiotikum-felhasználás szempontjából.

What role will circularity play in the future of feed production?

Panelists at the 2024 Feed Mill of the Future Conference covered topics including technologies and techniques that can improve feed production's efficiency and bottom line.

Circularity is based on the concept of reduce, reuse and recycle, and focuses on the goal of repurposing and eliminating waste, therefore improving environmental sustainability. Feeding human food waste to insects that will break down that waste and then using the insects in animal feed to produce protein that will then feed humans is an example of circularity.

"Circularity is not a new concept. It makes a lot of sense to try to extract value from all parts of resources," Maye Walraven, North American general manager and chief impact officer, Innovafeed, said. "But I think it's becoming more of a trend or more of a priority because we are feeling environmental pressure."

As an insect producer, Innovafeed was inspired to build upon processes that occur naturally and improve

upon it. "We kind of took our inspiration through nature and, in nature, insects really act as a super upcycler," she said. "They will feed on this very low-quality biomass that other animals won't eat … and so we're really trying to reproduce that on a large industrial scale where we grow insects and we tap into very large stocks of byproducts that are available." The insects are then used as feed ingredients, including oil and protein, as well as even the insects' waste products as a fertilizer.

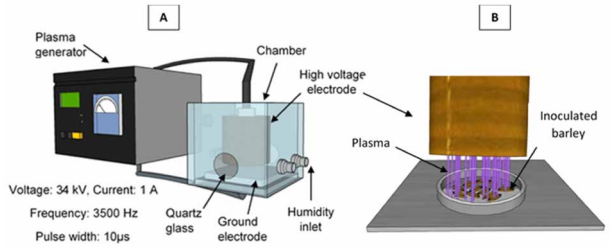
The panel also discussed the role of feed additives and artificial intelligence in improving sustainability and reducing waste.

Via www.feedstrategy.com, 08/02/2024
https://www.feedstrategy.com/sustainability-in-feed-production/circularity-upcycling/article/15663737/what-is-circularitys-role-in-the-future-of-feed-production

Plasma treatment reduces mycotoxins in grains

Treating wheat and barley grains with atmospheric cold plasma has been found to reduce mycotoxin levels and boost seed germination. Canadian researchers have shown that by using a relatively low temperature version of the typically superheated matter they were able to lower levels of harmful toxins caused by fungi that thrive in warm, humid conditions.

Lead researcher Ehsan Feizollahi, from the Faculty of Agricultural, Life and Environmental Sciences at the University of Alberta, said the discovery could pro-



vide the food processing and livestock feed industries with more effective and efficient ways to process grains that were safe for consumption. Mycotoxins pose threats to both livestock and human health.

Feizollahi said because mycotoxins resist high temperatures, removing them from grains was challenging: "There is no effective method currently available for reducing mycotoxins on grain," adding that com-

mon food processing practices such as roasting, baking and frying may only partially remove them: "We need to find better methods of decontamination."

He created 2 forms of the plasma: as an ionized gas and as liquid. And then used them to treat barley and wheat grains infected with two mycotoxins that are particularly troublesome across Canada and the globe – zearalenone and deoxynivalenol. Using the plasma to decontaminate the grains lowered the levels of the 2 toxins by 54%, which Professor M.S. Roopesh, who supervised Feizollai's work, described as a promising start.

"With optimisation for the conditions, figuring in factors such as the type of plasma, treatment conditionals and treatment time, we could achieve much more than 54%. Ultimately, that means farmers could use more of their grain, so there's less waste, and from the health point of view, humans and animals can consume the grain and not be affected by mycotoxins," added Roopesh.

The researchers also found that the treatment processes they used took only a short time, ranging from a minute to an hour, potentially increasing efficiency for the food processing industry. The treatments are also environmentally sustainable.

Via www.allaboutfeed.net, 25/03/2024
https://www.allaboutfeed.net/all-about/mycotoxins/plasma-treatment-reduces-mycotoxins-in-grains/

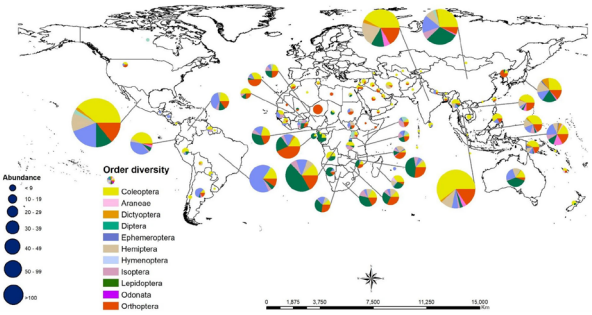
Global atlas of edible insects is available

East African scientists have produced a global atlas of edible insects, providing analysis of diversity and commonality that can contribute to food systems and sustainability as the planet faces uncertainties caused by population growth and a surge in demand for nutritious food.

The scientists say that edible insects, with their low environmental footprint, high food conversion ratio, rapid growth and nutritional values, can play a vital role in the global food system.

Until now, substantial knowledge gaps persist regarding their diversity global distribution and shared characteristics across regions, potentially impending effective scaling and access to edible insects. This led the scientists from universities in Kenya, South Africa and Uganda to compile and analysis the fragmented database on edible insects. They also identified potential drivers that elucidate global insect consumption, focusing on promoting a sustainable food system.

Data was collected from a variety of sources, including lists of edible insect species from the literature and various research databases. Subsequently, they performed a series of analytics at country, regional and continent levels.



The study revealed some common and specific practices related to edible insect access and utilisation across countries and regions. Although insect consumption is often rooted in cultural practices, it exhibits correlations with land cover, the geographical presence of potentially edible insects, the size of a country's population and income levels. People living in Africa, Asia and Latin America eat insects as it is part of their culture while increased consciousness and the need for food sustainability are the driving forces in Europe to evaluate eating insects.

The study concluded that edible insects are becoming an increasing significant part of the future of planetary food systems and that more proactive efforts are required to promote them for their effective contribution to achieving sustainable food production.

Via www.allaboutfeed.net, 04/03/2024.
https://www.allaboutfeed.net/all-about/new-proteins/global-atlas-of-edible-insects-launched/

Alfalfa feed mill in Siberia to be built on billions of roubles

Mayak, a Siberia agricultural firm, has rolled out plans to invest 5.5 billion roubles ($60 million) into the construction of a mill for processing alfalfa into meal for animal feed. A significant share of the production volumes is planned to be exported to China. Vladimir Chermetov[1] , director of the agricultural department of the Tyumen Oblast, told the local press that around 2.5 billion roubles ($28 million) will be allocated to land reclamation.

Mayak plans to establish an irrigation system to effectively grow alfalfa in Siberia. The mill will artificially dry the obtained product and process it into what the company describes as a "vitamin-herbal meal." Alexander Moor, governor of Tyumen Oblast, has confirmed that the region was working on several projects involving growing alfalfa. During a press conference in late 2023, he underscored the importance of

export supplies to China, indicating that the country massively uses alfalfa to feed livestock.

Alfalfa is not widely used in the Russian feed industry, though a few livestock companies have reported plans to use it as a feed ingredient. On March 15, a prominent Russian turkey manufacturer, Damate, unveiled plans to sow 1,400 ha of agricultural land with soybean, corn and alfalfa to secure enough feed for its sheep-breeding project. In mid-2023, Russian company Arabia Expo Agro also shared an intention to build a complex to grow alfalfa for further processing into hay, bales, and feed pellets.

One of the challenges for the Siberian alfalfa project might be associated with a lack of high-quality seeds in Russia. Igor Baringolts, chairman of the Russian agricultural company RM-Agro, estimated that the average protein content in alfalfa silage produced from seeds available in Russia is 17%, while with better seeds, this figure could be as high as 27%.

Via www.allaboutfeed.net, 01/04/2024
https://www.allaboutfeed.net/all-about/farm-mill-visits/billions-invested-into-siberia-alfalfa-feed-mill-eyeing-the-chinese-market/

Gas sterilisation of feed considered as alternative to heat treatment

A group of scientists from Siberia claimed it had developed a cost-effective technology for the sterilisation of feed with a gas mixture. Long-term feed storage bears the risk of bacterial contamination and the emergence of moulds, producing mycotoxins, the scientists have said. "These substances threaten the health of animals and birds, as feed spoils, also losing its nutritional value," the researchers have warned.

To prevent mycotoxin containation, heat treatment is often used. In Russia, the existing technical regulations prescribed to perform it for at least half an

hour at a temperature of around 70 C. The relatively high cost of heat treatment is believed to be the key problem. Some farmers opt not to perform it at all, seeking cost reduction.

The scientists claimed they built a pilot installation for treating feed with a special gas composition. "The cost of this unit, depending on the volume and tasks, will range between 200,000 ($2,100) and 400,000 ($4,200) roubles," the researchers said. The unit is expected to run in experimental mode for the next 6 months, after which the scientist hopes to put the technology into industrial use.

Sergey Leonov, one of the authors of the study, emphasised that the technology is absolutely safe for animals and end users, and its use will help farmers mitigate costs. There is no information on the

type of gas planned to be used. The only hint the scientists provided is that a similar approach can be found in other industries.

Gas sterilisation is widely used in the Russian healthcare system, where almost always it is performed with ethylene oxide. The prepared gas mixture is launched into a special chamber, disinfecting medical tools under low temperature and pressure for a few hours. The technology is believed to kill all pathogenic microorganisms and, indeed, is associated with low costs. During the process, ethylene oxide is not wasted and can be used over and over again.

However, there is no information a similar approach has ever been tried in the feed industry.

Via www.allaboutfeed.net, 06/03/2024.
https://www.allaboutfeed.net/all-about/mycotoxins/gas-sterilisation-of-feed-proposed-as-alternative-to-heat-treatment/

Megjelentek szakmai kiadványaink

Új, aktuális tartalmakkal olvashatják partnereink a **Baromfi Hírmondót**, a **Konda Ipsost** és a **Marhalevelet**.

A **Hírmondó** fő témája a madárinfluenza, de olvashatnak a Tegelről, a legnagyobb új-zélandi baromfi integrációjáról is, ahol évente hatvan millió brojlert dolgoznak fel, ezzel 50 %-os a részesedésük az új-zélandi piacon. Az Agrofeed AIMS konferenciáján elhangzott előadásokból is szemezgettünk, érdekes információkat megosztva a külföldi szakemberektől.

A **Marhalevélben** bemutatjuk az új takarmánykiegészítőinket, illetve bepillantást nyerhetnek a Mocsai Búzakalász Szövetkezet 460 tehenes szarvasmarha telepének mindennapjaiba. A telepen hatékony borjúnevelés folyik, ennek részleteire világít rá a cikk.

A precíziós takarmányozási és technológiai elemeket vizsgálja az egészséges és költséghatékony malacnevelésben a **Konda Ipsos**. Olvashatunk még a fermentált termék tapasztalatokról és az új antibiotikum felhasználás és az azt befolyásoló tényezők elemzésére alkalmas AB Kontroll szoftverünkről is. A program összeköttetésben áll a NÉBIH rendszerével, így könnyen lejelenthetőek a rendszerezett adatok.

Seed shortage threatens Russian grain farmers with bankruptcy

A surge in operation costs could drive many Russian grain farmers into bankruptcy in the current season, Arkady Zlochevsky, president of the Russian Grain Union has said during a press conference in Moscow. The key concerns are associated with seed prices, which have spiked as the government capped imports from Western countries.

The Russian government has imposed import quotas on seeds from countries deemed unfriendly at the end of January. Under the new rules, Russian farmers are allowed to import 33,100 tonnes of seeds through December 31, 2024. Import quota on corn seeds is set at 5,000 tonnes, barley at 600 tonnes, while quotas on wheat and soybean seeds at zero. In 2023, Russia imported 57,700 tonnes of seeds, a lion's share of which was delivered from Western countries.

The existing quotas have been distributed among Russian grain farmers, though Zlochevsky described the division as "unfair." He revealed that farmers with no experience dealing with government agencies failed to secure the necessary quotas to keep their operations running smoothly. As a result, large stocks of seeds have accumulated at the Russian customs

warehouses, Zlochevsky said. The batches ordered before the government implemented the import quotas should be either returned to the sender or destroyed.

Import quotas triggered a price hike in the Russian market. Compared with the previous year, the average price of seeds nearly doubled, according to Zlochevsky. The cost of fuel and plant-protecting agents has recently subsided, but this only partly compensated for farmers' losses due to the jump in seed prices.

Zlochevsky said that switching Russian production to domestic seeds in general is the right move. He, however, warned against using import restrictions as an impetus for the development of domestic seed production.

Via www.allaboutfeed.net, 22/03/2024
https://www.allaboutfeed.net/animal-feed/raw-materials/seed-shortage-pushes-russian-grain-farmers-closer-to-bankruptcy/

Animal feed sales down in Germany

At 21.7 million tonnes, feed production in Germany in the 2023 calendar year was around 360,000 tonnes or 1.6% less than in the previous 12 months. This is according to the latest figures from the German animal feed association, DVT.

However, the year-on-year contraction represents a partial easing in the long-term contraction in the German feed sector. Figures from the European Feed Manufacturers' Association FEFAC put the volume of feed produced in Germany in 2022 at just under 22.2 million tonnes. This was 5.8% lower than the previous year.

The decline in total national feed output is attributed by DVT President Cord Schiplage mainly to reduced sales of pig feeds. For this segment, production was down approximately 500,000 tonnes or 5.8% to 8 million tonnes for 2023. Fattening pig numbers in the November census had fallen significantly year-on-year by as much as 11.6%, he said. Overall in 2023, the country's swine population contracted by 1.4% to 9.6 million.

In contrast, feed production in Germany expanded in 2023 for the other main market segments. For cattle, output volume was up around 100,000 million tonnes for the year to 6.5 million tonnes, while there was an 80,000 million tonnes increase in poultry feed production to 6.3 million tonnes.

In terms of revenue, DVT figures also indicate a drop in the value of feed sales in 2023 to EUR 9.4 billion. This compares with EUR 10.5 billion for the previous year. According to Schiplage, the increased availability of feed ingredients on global markets last year drove the decline in sales value — along with price and competitive pressures. During the comparative period of 2022, he said, raw material and energy costs had been exceptionally high.

In 2023, there were 276 compound feed companies in Germany, according to DVT. This was five fewer than 12 months previously.

Provisional figures for 2023 from FEFAC points to a further reduction in compound feed production in the EU-27 by 2% to 144.3 million tonnes.

Via www.feedstrategy.com, 19/03/2024
https://www.feedstrategy.com/business-markets/feed-production-by-region/article/15666664/germany-reports-decline-in-animal-feed-sales-feed-strategy

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