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#### MONTHLY POULTRY MAGAZINE

#### VOL. XXII

XXII No. 8 February 2024

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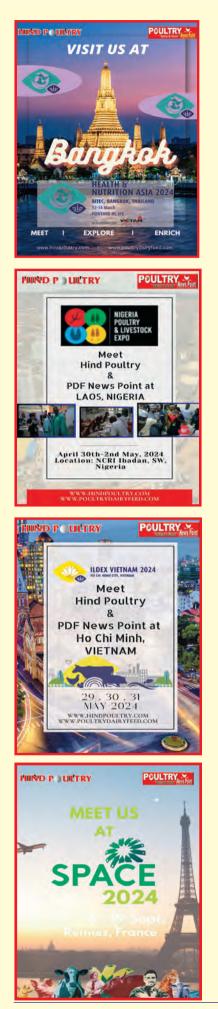
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Hyderabad, February 2024



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#### Books published by Hind Publications released during Poultry India Exhibition in Hyderabad

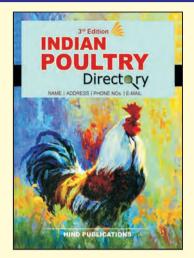


One of the largest circulating magazines on poultry in South Asia and also the largest publishers of books on poultry in India recently participated in the POULTRY INDIA exhibition. From its booth numbers W 36 and 37, Hind Publications and PDF News Points released several of its new publications on poultry.

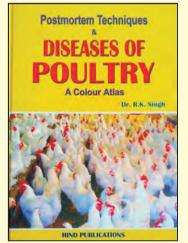
- Mr. Suresh Chitturi- Chairman IEC, released the book Seven Stages of Layer Management.
- Mr. O. P. Singh- Managing Director HUVEPHARMA, and Mr. Edward Manchester from ECOLEX, released the book Poultry Meat and Egg Processing whereas.
- Mr. Ricky Thaper- Treasurer, PFI and Dr. Dinesh Arora-MD Ravioza biotech set the stage for promotion of the broucher of SPACE 2024 by releasing it in the presence of people of the poultry fraternity.

We take this opportunity to express our sincere thanks to Mr. Suresh Chitturi, Mr. O. P. Singh, Mr. Edward Manchester, Mr. Nipun Gupta, Mr. Joginder Singh, Mr. Ricky Thaper and Dr. Dinesh Arora for their gracious presence by taking time from their busy schedule to release our new publications.

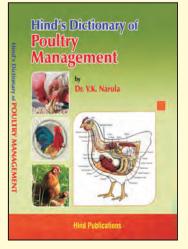
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Hyderabad, February 2024

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Venkateshwara B V Bio-Corp Private Limited organised series of Technical Sseminars on "BV 300 Layer Management and Nutrition".



#### VENKATESHWARA BV BIO-CORP PVT

**LTD** organized series of Technical seminars in association with Phoenix Group, Jabalpur for commercial Layer Farmers on 17<sup>th</sup>,18<sup>th</sup> and 20<sup>th</sup>January 2024 at Bhopal, Jabalpur and Raipur respectively. This technical seminar was attended by layer farmers of Bhopal, Indore, Jabalpur, Raipur and surrounding area.

Dr. H.G Murade, DGM, Sales and Marketing, welcomed all attendees and introduced the speakers for thetechnical seminar.

Dr Sunil Nadgauda, DGM, Technical, explained in detail about the "NewBV 300 commercial Layers Nutrition and Management Guide" in all aspects.During presentation heinsisted more on producing quality pullets for better laying performance.The excerpts from his presentation can be summarized as below.

- BV 300 performance review over 100 weeks of age.
- Importance of body weight monitoring in rearing period and its impact on laying performance.
- Early Laying Nutrition to maximize peak production and to maintain the consistency.

- Benefits of Phase feeding to reduce the overall egg production cost and to optimize the efficiency.
- Impact of feed toxicity on egg size, egg shell quality and immunity of the bird along with production performance.
- Importance of body weight management and lighting management in laying as well as in rearing period.
- Importance of gut health in long laying birds in egg productions. Gut health can be boosted by using gut acidifiers, probiotics and other solutions.
- Innovative premix solutions to simplify the feed manufacturing and also to avoid errors during feed production were discussed. These solutions include EggXtra 5% composite premix and Mixiblend 0.4 % premix for Layers.

Dr Sunil Bhidwale, Technical Director, Phoenix Group, presented regarding Current Disease scenario in MP and CG states and strategies to prevent and control the same. He discussed in detail regarding the causes and best possible



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solutions to prevent the emerging and re-emerging diseases. He insisted to follow strict biosecurity to be followed at farm to enhance the productivity Dr Sunil Nadgauda and Dr Sunil Bhindwale answered the queries of the attendees related to the subjectand other technical queries regarding layer nutrition and management.

Dr H G Murade summarized the presentations and suggested to follow the proper vaccination schedule as per the guidelines. He emphasized more on use of inactivated vaccines in laying phase. Mr Prabhakar Iyer, CEO, Phoenix Group and Mr Pallabh Paul GM-Phoenix Group, given conclusive remarks on technical seminar and assured the farmers regarding best possible services.

The New BV 300 layer nutrition and management guide November 2023 was launched during these seminars and copies were distributed to the layer farmers.

Mr. Manish Podar, Zonal Manager proposed vote of thanks. The local Venworld Team organised these technical seminars.



#### NOVUS Names New Director for South Central Asia

NOVUS recently named Dr. Manish Kumar Singh its new regional director for NOVUS in South Central Asia. In this role, Dr. Singh is responsible for developing and executing the Novus business strategy in the region.

"Asia represents a huge opportunity for growth for NOVUS," says Vaibhav Nagpal, DVM, NOVUS vice president and managing director for Asia. "Manish has extensive expertise about the market and the customers



throughout South Central Asia. He also has the confidence of his colleagues to make sound, strategic decisions that will help grow the business in the region. With 15 years of experience working in South Asia and Asia-Pacific regions in various roles, I am sure he will strengthen the NOVUS team and grow the business." Dr. Singh says his top priority in the new role is his colleagues. "I aim to build a culture of trust by fully engaging my colleagues," he says. "Agriculture is a business about animals and plants, but the foundation is people. It takes many people in many roles working together to produce high-quality, safe, nutritious food. By fostering a collaborative working environment across all my teams, we will be more successful as a trusted partner for all our customers and stakeholders." Speaking about the poultry and dairy customers in South Central Asia, Dr. Singh says there are many opportunities for intelligent nutrition from NOVUS to positively impact animal performance and help producers achieve their goals. "Feed cost is a top concern for producers worldwide. We can help optimize feed costs and affect the impact of anti-nutritional factors through our knowledge about feedstuffs along with our CIBENZA® Enzyme Feed Additive," he says. "Meat consumption and processing is on the rise; we have solutions for those concerned about meat quality, growth efficiency and structural health. Our team also has global expertise in maternal health that, partnered with the use of MINTREX® Bis-Chelated Trace Minerals, can help optimize the reproductive performance." As an international company, Dr. Singh said NOVUS has a dedicated team of in-house technical experts and renowned third-party consultants to support producers as they work to improve gut health and immune system function and implement antibiotic-free production.

"Through an integrated approach combining technical know-how with gut health products like AVIMATRIX® Feed Solution and NEXT ENHANCE® Feed Solution, we are helping create effective ABF production," he says. Dr. Singh says following the initial success of the NOVUS dairy team in India, the company has invested more resources, allowing further expansion in this market. The goal is to reach more customers and bring innovative solutions backed by scientific research to the largest dairy market in the world. "There are many challenges and opportunities in dairy production. NOVUS has decades' worth of research and commercial trials demonstrating how we can improve milk fat production and reproductive performance," he says. "On the challenge side, we have products that are shown to reduce somatic cell count and manage lameness to improve productivity and extend the herd's longevity. This is an important growth market for NOVUS and we have a lot to offer." Dr. Singh came to NOVUS in 2019 to serve as the head of strategic marketing and technical services for South Central Asia before leading the marketing team for the Asia-Pacific region. He held roles at Cargill and Alltech before coming to NOVUS. 🔒



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#### ECOLEX GRAND ENTRY INTO INDIAN MARKET

A second second



## Ecolex Animal Nutrition Making a Grand Entry into India

Ecolex Animal Nutrition, a prominent figure in the animal nutrition industry since its inception in 2005, has recently unveiled an ambitious vision for a new era in sustainable animal nutrition. Operating from its Singapore headquarters and utilizing cutting-edge manufacturing facilities in Malaysia, Ecolex has demonstrated remarkable growth, extending its influence to over 45 countries across six continents. In an exciting development, the company is set to continue its global expansion, with a strategy to enter the Indian subcontinent early in 2024.

Dedicated to providing high-quality, nutritionally advanced products and solutions to the livestock industry, Ecolex's international presence reflects the trust and confidence customers worldwide have placed in its portfolio. The company not only aims to be recognized for its products but also for its commitment to innovation, sustainability, and the betterment of the livestock industry.

Ecolex envisions a future where animal nutrition goes beyond sustenance, contributing to profitability, sustainability, and the well-being of the livestock industry. To realize this vision, the company has realigned its product portfolio into four distinct Pillars of Competence, each addressing specific needs:

- 1. Functional Lipids- A Game-Changer in Animal Nutrition:
  - Encompassing rumen bypass fats and innovative spray-cooledgranulated vegetable oils, this pillar enhances the health and productivity of livestock.
  - Rumen bypass fats benefit dairy cattle by improving energy utilization and increasing milk production, while spray-cooledgranulated vegetable oils provide essential fatty acids for monogastric applications.

2. Performance Solutions - Enhancing Nutritional Bioavailability:

- This pillar comprises blends of molecules supporting improved nutritional bioavailability and digestion through emulsification and viscosity modulation.
- Livestock farmers benefit from improved feed efficiency, reduced waste, and healthier animals, contributing to a more sustainable and efficient industry.
- 3. Health and Environment Solutions- Nurturing Wellbeing and Sustainability:
  - Focusing on molecules with broad-spectrum antimicrobial capabilities, this pillar addresses health challenges in animals.
  - Ecolex is also committed to molecules with environmental benefits, actively reducing methane emissions in ruminant livestock and pioneering a more sustainable approach to animal nutrition.
- 4. Alternative Ingredients- Paving the Way for Sustainable Feeding:
  - This pillar offers innovative and eco-friendly ingredient options, including insect meals, oils,

bioactive components, and sustainable vegetable protein sources.

• By reducing the carbon footprint in livestock production, Ecolex takes significant steps toward a more sustainable future for animal nutrition.

Ecolex is committed to supporting customers beyond product provision, offering knowledge, resources, and expertise to thrive in a changing world. Environmental responsibility is a top priority, as the company aims to lead the way in sustainable animal nutrition by addressing issues such as methane emissions and promoting efficient feed utilization.

The journey of Ecolex Animal Nutrition has been made possible through the support and trust of customers, partners, and stakeholders worldwide. As the company looks to the future, it invites others to join in its transformative journey towards innovation, sustainability, and the well-being of livestock. By realigning into the four Pillars of Competence, Ecolex seeks to revolutionize animal nutrition, creating a brighter, more sustainable future for the industry and the planet.

To learn more and be part of this exciting adventure, visitwww.ecolexanimalnutrition.comor scan the QR code below.Together, Ecolex Animal Nutrition and its partners aim to shape a more prosperous and environmentally responsible future for the livestock industry, extending their reach into the promising landscape of the Indian subcontinent very soon.

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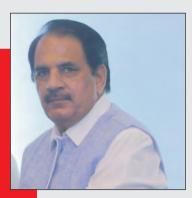


'Majority of field trials were conducted at same farm with multiple sheds in integrations across various geographical locations and at different time of the year. Some of the integrators were generous in sharing complete production indices while others communicated the summary of the trial results. In the field trials, Improval™ MS was compared with antibiotic/probiotic/antibiotic + probiotic/probiotic + prebiotic control. Detailed reports availble on request.





Even After Becoming a 100% Subsidiary of Zenex Animal Health - Ayurvet Operates as a Science-driven Organization, Aligning with Our Commitment to Research and Science in both Verticals



Zenex Animal Health India was founded in the year 2000. Today it provides employment to over 700 people."ZENEX is the Provider of medical products and services intended for the poultry and animal industry. ZENEX offers formulation, active pharmaceutical ingredients, wellness products as well as diagnostics for animal healthcare along with related technical services to the veterinary and poultry farming fraternities, helping to ensure complete healthcare for animals by professionals". Recently Dr. Arun Atrey, the Managing Director and CEO at Zenex Animal Health India had visited the office of the Telangana Poultry Farmers' Association in Hyderabad."During his visit M. K. Vyas- Managing partner of HIND POULTRY and Shashank Purohit got an opportunity to interact with him on various topics ranging from Zenex's future plans to taking over the AUURVET. "The abstract of the interview is given here under.

**Question** : As the managing director overseeing both a modern veterinary pharmaceutical company and a recently acquired Ayurvet pharmaceutical company, how do you plan to leverage the strengths and distinctiveness of each entity without merging them? How do you foresee the synergy between these diverse pharmaceutical approaches, and what strategic measures will be implemented to ensure that both companies thrive individually while potentially benefiting from each other's expertise and market insights?

**Dr. Arun Atrey :** The question you raised is indeed pertinent and fundamental, considering Zenex' historical focus on allopathic drugs throughout our existence. We have consistently been recognized in the country for pioneering "first-in-themarket" products. As far back as the 90s, we foresaw a shift in demand towards alternative feed additives. In 1997, we were among the first to establish a probiotic plant in the country, anticipating the potential replacement of certain feed additives by probiotics in the future. Despite the successful launch of a new probiotic strain, ZMD-02, with outstanding results acknowledged at the World Poultry Congress in Italy, our primary focus has remained on allopathy until now.

Turning our attention to Ayurveda, we firmly believe in India's ancient system of disease management, known as the Ayurvedic Medicinal system. The significance of herbal drugs became particularly evident during the COVID-19 pandemic, leading to an increased acceptance and usage of Ayurvedic drugs. Globally, and within India, concerns about the safety of food, including milk, meat, and vegetables, have heightened among consumers. Discussions about animal feed and residues have become commonplace. In light of these concerns, we identified

Ayurveda as a viable option to offer veterinarians, para-veterinarians, cattle farmers, and poultry farmers.

While acknowledging the preexistence of such options, we sought to provide a more comprehensive platform with wider availability to farmers. This brings us to the question of why Ayurvet? Ayurvet was initially a part of the Dabur Group, but around 2002, it transitioned to Ayurvet Ltd., exclusively focusing on herbal formulations. Led by Mr. Pradeep Burman, with a deep commitment to environmental protection and a keen interest in Ayurveda, Ayurvet demonstrated exemplary work with 770 published research articles - a significant achievement in terms of research.

Upon visiting their manufacturing unit and engaging with their team, we recognized the value of the products they were creating. More than a business opportunity, we saw Ayurvet as a science-driven organization. The synergy between both our verticals is apparent, as Ayurvet remains a 100% Ayurveda-based formulation manufacturing unit, even after becoming a 100% subsidiary of Zenex Animal Health. Ayurvet operates as a science-driven organization, aligning with our commitment to research and science in both verticals. Our offering provides a range of options to consumers, emphasizing our dedication to science and research in our approach. We see the potential for Ayurvet's herbal formulations in the global market, with interest expressed by individuals from Latin America at the recent Atlanta show.

As part of our global outreach, we have channels in Poland for exporting herbals to the European market, complemented by a facility in Germany acquired in 2012. Our commitment to research is evident in our two manufacturing units in India (Haridwar and Baddi) and two dedicated R&D teams working on new molecules. Our organization's mission extends beyond revenue generation; we aim to be disciplined contributors to the country by providing safer and more economical options to consumers.

With access to nearly 50 countries and ongoing plant upgrades, such as the recent one in Haridwar to meet regulatory norms, our international footprint continues to expand. Notably, we have garnered investments from serious backers, including a consortium of financial investors led by Multiples PE, alongside CPP Investments, RARE Enterprises, SBI, ADB, IFC, and HNIs. In conclusion, our organization, driven by a commitment that



precedes monetary considerations, places paramount importance on maintaining the highest ethical and disciplined standards in every aspect of our field. We strive for a more conscientious and purposeful approach to achieving our goals.

**Question :** What is the size of the herbal Drugs in Veterinary market?

**Dr. Arun Atrey** : Currently, our focus is not solely on the market size; it's not about the extent of our acquisition goals. Instead, our primary concern lies in how to effectively communicate the size and determine the recipients of our enhanced solutions. Presently, Ayurvet is not extensively engaged in the Poultry sector, but it possesses remarkable products, a fact I can attest to as a veterinarian. We are committed to revitalizing this division and making it robust.

To achieve this, we are actively bolstering our team and expanding into the companion animal division. Our current objective centers around providing superior solutions grounded in scientific research. As a prominent Indian organization, we recognize our responsibility to fulfill certain obligations. Therefore, the size is currently not a matter of concern for us. During a recent zonal meeting with our Ayurvet team in Hyderabad, I emphasized that our industry plays a crucial role in fortifying the rural economy. Considering the challenges posed by the shrinking agricultural land and the need to serve a large population, Animal Husbandry and Poultry emerge as key sectors capable of significantly contributing to the strengthening of the rural economy.

**Question** : Given the recent disruptions in global supply chains, how has Zenex, now along with Ayurvet adapted its supply chain strategies to ensure product availability?

**Dr. Arun Atrey :** Amidst the challenges posed by the COVID-19 pandemic, our organization encountered difficulties. Unfortunately, India also grappled with a significant outbreak of LSD during this period. As a responsible entity in India, it was our obligation to contribute by providing antimicrobials, supportive products, and related assistance.

Despite facing certain issues concerning Active Pharmaceutical

Ingredients (API) during the pandemic, we made concerted efforts to amass a sufficient inventory of raw materials. Notably, our plant in Haridwar remained operational throughout the entire COVID-19 period, even when a majority of people were working remotely. The well-being of our personnel in Haridwar was a constant concern for us during these challenging times. Presently, we have encountered challenges in sea freight, resulting in delays in our supplies. We are diligently addressing these issues to the best of our abilities. It is important to acknowledge that unforeseen circumstances may arise at any given point, making it challenging to anticipate all potential issues. However, we are committed to navigating through these challenges and ensuring the best possible outcomes for our operations.

**Question :** What strategies are in place to attract and retain top talent in the veterinary pharmaceutical industry?

Dr. Arun Atrey : At the industry level, we encountered a significant challenge related to the attraction of top talent, a pervasive issue across the entire sector. Recognizing this as a nationwide concern, INFAH established a subcommittee comprising HR professionals. This subcommittee is dedicated to addressing the challenge by actively promoting the Animal Health Industry to academies prospective and veterinary colleges. Their efforts focus on educating these institutions about the numerous opportunities available within the industry.

In the context of Zenex, our approach emphasizes fostering an environment of trust and transparency within the system. From my perspective, when we acquired Ayurvet, the philosophy was that 1+1 equals 1. This signifies our commitment to merging distinct organizational cultures into a singular, cohesive identity. It is essential for us to ensure unity; otherwise, maintaining two separate cultures could potentially lead to challenges. We firmly believe that the success of such acquisitions is not solely dependent on financial aspects but is equally rooted in cultural integration.

Our acquisition of a plant from Zoetis in 2016 exemplifies our commitment to effective integration. Immediately following the formalities, I engaged with the local community, including both employees and contract workers. The transition from a multinational company to one owned by an Indian entity was a significant change for them. Despite our size, I took the time to speak with everyone, articulating our vision and addressing any questions or concerns they might have had.

This same approach was applied with the acquisition of Ayurvet. After the official announcement, we conducted a town hall meeting with senior officials the next day, ensuring transparency and clarity in communication. Subsequently, I have been meeting with every individual associated with the company to further reinforce our commitment to a shared vision and a unified culture.

#### AIPBA Demands Dutyfree Import of Maize

The All India Poultry Breeders Association (AIPBA) demanded that the government permit duty-free import of maize to meet the requirement of the poultry industry amid rise in the grain consumption ethanol production and in insufficient domestic output. AIPBA Chairman Bahadur Ali, in a representation to Ministry of Fisheries, Animal Husbandry and Dairying, said ethanol makers' growing thirst for maize has also pushed prices skyward, posing a major challenge for Indian poultry farmers." With maize prices hovering around Rs 22-23 per kg across India, poultry farmers are grappling with unsustainable costs," he said and cautioned that the burden is expected to intensify further by February 2024, which may adversely impact the poultry industry. Against this backdrop, the association said there are two options before the government for addressing the rising demand for maize in both livestock feed and other industries. One is importing maize and the other is increasing domestic production.

"However, significant shortterm increase in domestic output is deemed improbable. Therefore, importing maize from other countries emerges as the most viable solution to meet the immediate demand," it stated in its representation. The current basic import duty on maize is 50 per cent.Citing concerns over the rising maize consumption in ethanol production, the association pointed out that India's 34.60 million tonne annual maize production is insufficient to meet the requirements of the poultry industry as well as the nation's food security. As per estimates of the Indian Institute of Millets Research, the poultry and livestock industry consume more than 60 per cent of the country's maize production, it said. 🔒





Venkateshwara B V Bio-Corp Private Limited organized series of Technical seminars for commercial Layer Farmers at Talegaon-Pune and Sangamner -Nasik





VENKATESHWARA BV BIO-CORP PVT LTD organized series of Technical seminarsfor commercial Layer Farmers on 24<sup>th</sup> and 25<sup>th</sup>January 2024 at Talegaon (Pune Dist.) and Sangamner (Nasik Dist.)-Maharashtra respectively. Mr. Ram Ghate,AGM, Sales and Marketing, welcomed all attendees and introduced the speakers for thetechnical seminar. Dr Sunil Nadgauda, DGM, Technical,explained in detail about the **"NewBV 300 commercial Layers Nutrition and Management Guide"**in all aspects on 24<sup>th</sup>Jan 2024.During presentation heinsisted more on producing quality pullets for better laying performance.The excerpts from his presentation can be summarized as below.

Dr Roshan Sarode presented about BV 300 nutrition and management on 25<sup>th</sup> Jan 2024 at Sangamner and discussed in detail about nutrition and management of BV 300 to achieve better performance.

- BV 300 performance review over 100 weeks of age.
- Importance of body weight monitoring in rearing period and its impact on laying performance.
- Early Laying Nutrition to maximize peak production and to maintain the consistency.



- Benefits of Phase feeding to reduce the overall egg production cost and to optimize the efficiency.
- Impact of feed toxicity on egg size, egg shell quality and immunity of the bird along with production performance.
- Importance of body weight management and lighting management in laying as well as in rearing period.
- Importance of gut health in long laying birds in egg productions. Gut health can be boosted by using gut acidifiers, probiotics and other solutions.
- Innovative premix solutions to simplify the feed manufacturing and also to avoid errors during feed production were discussed. These solutions include EggXtra 5 % composite premix and Mixiblend 0.4 % premix for Layers.

Dr H G Murade presented about proper vaccination and procedures followed for developing good immunity. He also guided about precaution to be taken during vaccination like maintaining cold chain, correct dosage of vaccine, method of vaccination and things to do before and after vaccination.



Dr H G Murade summarized the presentations and suggested to follow the proper vaccination schedule as per the guidelines. He emphasized more on use of inactivated vaccines in laying phase. Dr Sunil Nadgauda and Dr H G Murade answered the queries of the attendees related to the subject and other technical queries regarding layer nutrition and management. The Technical Seminar was attended by around 190Layer farmersNashik and Pune districts and surrounding area. Dr Tushar Mahanwar, Regional TechnicalManager proposed vote of thanks. The local Venworld Team organised these technical seminars.

#### Scientists Want to Source Feed Protein from Poultry Litter

A group of scientists from Russia's Ufa science and technology university said it developed a promising scheme for extracting protein from poultry litter. The authors of the study say that they developed a special solution, allowing them to

dissolve poultry litter and obtain protein, among other substances. If the technology is proven effective, it will save poultry farmers a lot of money.

The scientists have already launched a pilot laboratory installation, while the first industrial line producing protein from poultry litter is in the pipeline, said Vadim Zakharov, acting rector of Ufa University. The authors of the study believe that this protein could be swiftly absorbed by chickens when passing through their organism the second time, though additional studies are required to prove that assumption.



#### The first field trial is on the way

The feed protein sourced from the chicken litter has already been successfully tried in manufacturing cattle feed. Currently, the authors are preparing for the first field trials at a poultry farm, stating that "the

chance for success is great." Abbazov also expressed confidence that this technology could be widely used.

#### **Environmental benefits**

Proper disposal of chicken litter is a headache for poultry businesses, where it is classified as waste posing a threat to the environment, the scientists said. It is believed that proper recycling of poultry litter was one of the key rationales for developing this technology.Thanks to our technologies, we can solve it, it will be great," said RashitFarkhutdinov, a professor at the Department of Biochemistry.

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- Vitamin E
   Vitamin D
- Vitamin D
   Vitamin K
- vitamin N

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## Efficacy amprolium re-confirmed

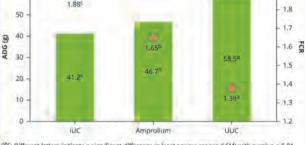
#### BEN DEHAECK, DVM, GLOBAL PRODUCT MANAGER ANTICOCCIDIALS, HUVEPHARMA

One of the most important diseases in poultry is coccidiosis, caused by infections with a highly contagious intestinal parasite of the genus Eimeria. An effective way to target this parasitic disease is the use of coccidiostats, mixed into feed. The EU has regulated the use of coccidiostats in regulation No 1831/2003 (the feed additive regulation). Amprolium hydrochloride ('amprolium') is a synthetic coccidiostat that does not possess any antibacterial activity, making it suitable for antibiotic-free production systems. Amprolium is one of the few synthetic compounds for which the mode of action is clearly described: due to its close structural similarity to thiamine (vitamin B1), it acts as a thiamine antagonist and competes for the absorption of thiamine by the Eimeria parasites. Thiamine analogues, such as amprolium, block absorption of thiamine and, as a result, cause starvation of the parasite due to thiamine deficiency. The thiamine transport system in the parasite is more sensitive to amprolium than that of the host, which explains why this coccidiostat is safe for use in chickens. It seems especially efficacious during schizogony (one of the three phases of the life cycle of Eimeria) as the demand for thiamine is at its highest then, thus allowing the development of an immune response.

#### **RESULTS META-ANALYSISVALUABLE BREEDERS**

Amprolium has been used intensively for a long time worldwide. To evaluate its efficacy after years of use, both in water (as treatment) and in feed (preventive) in the US, a meta-analysis on eight ASTs (anticoccidial sensitivity trials) was conducted. The Eimeria strains used to challenge the birds were collected in 2018 from eight different regions in the US. Each sample originated from a different state and/or complex and was composed of subsamples from multiple farms. Each strain was evaluated in an individual trial, conducted by the University of Georgia (US), using the same standardized protocol. Birds reared in a clean environment until 12 days of age were allocated to different groups: uninfected untreated control (UUC), infected untreated control (IUC) and infected treated group (IT). The latter received amprolium in the feed at 125ppm (registered dose) until the end of the trial. At 14 days of age, the birds were infected with the respective Eimeria strains collected from the different areas. At the end of the trials (seven days post infection), performance parameters were measured between day 12 (allocation) and the end (day 20).

Figure 1 - Performance results of the meta-analysis conducted on 8 samples collected in the US.  $\begin{bmatrix} 70\\ -\\ 50\\ -\\ 50\\ -\\ 50\\ -\\ 0\\ -\\ 1.8 \end{bmatrix}$ 



abc- Different letters indicate a significant difference in least square means (LSM) with p-value < 0.01. The results are expressed as least square mean (LMS).

#### SUITABLE FOR ABF SYSTEMS

Meta-analysis of the different AST trials showed that amprolium significantly reduced the feed conversion ratio (FCR) from 1.88 to 1.65 and increased the average daily gain from 41.2 g to 46.7g compared with the IUC, indicating that amprolium is able to overcome the negative effects caused by the coccidiosis infection (Figure 1). These results confirmed the efficacy of amprolium to control coccidiosis under field conditions where the product was used extensively. In summary, amprolium (Coxam®)\* has robust efficacy after many years of use and it is suitable for use in **antibiotic-free** (ABF) production systems.

To know more, please contact Huvepharma technical team



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Hyderabad, February 2024









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# TOXO®-XL

3-D approach for Mycotoxin Risk Management

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#### 3-D approach for Mycotoxin Risk Management

ycotoxicosis are dis eases caused by the poisonous effects of the toxins produced by filamentous micro fungi (i.e., toxigenic moulds). Hundreds of mycotoxins are known and can produce mild to severe toxic effects when they occur above levels of concern.Poultry is particularly susceptible to mycotoxicosis, as they are often fed diets that contain a variety of grains and other ingredients that may be contaminated with mycotoxins.

The importance of mycotoxin problems in poultry is probably considerable yet difficult to measure directly. Chronic low levels of exposure to more than one type of mycotoxin appears to be a very common now a days. Usage of alternate raw materials in poultry diets also causes the risk of exposure to multiple mycotoxins. Multiple mycotoxicosis in poultry refers to the presence of two or more different mycotoxins in the same feed or feed ingredient, which can lead to more severe and complex symptoms. The symptoms of mycotoxicosis in poultry can vary depending on the type and degree of the toxin exposure.

Some of the most common symptoms include decreased feed

intake, reduced growth, poor-egg production, decreased immunity, and even death in severe cases. When multiple mycotoxins are present, the symptoms may be more severe and may include a range of different effects on the birds' health and performance.

Feed and food production chains are at risk, globally due to -

- Mycotoxin contamination is one of the main threats in feed production.Improper feed storage, heat & humidity favour the growth of toxicogenic fungi, which produce mycotoxins.
- The sharp rise in international trade has intensified the mycotoxin risk globally.
- Mycotoxin levels in feed and food require careful monitoring and control.

Mycotoxins can have additive, synergistic, and antagonistic effects with other toxins, infectious agents, and nutritional requirements. Mycotoxins can also interact with drugs used as therapeutic agents and diminish the effects of vaccines administered to poultry.

Common mycotoxins associated with mycotoxicosis in poultry include Aflatoxins, Ochratoxins, Fumnonisins,

By Dr. Stuti Baruah, Program Manager -Feed Safety, Trouw Nutrition South Asia

Zearalenone, and Trichothecenes such as deoxynivalenol (DON) and T-2 toxins. Chronic or intermittent exposure can occur in regions where grain and feed ingredients are of poor quality and when feed storage is substandard or prolonged. Impaired production efficiency can be a clue to a mycotoxin problem, as can improvement due to correction of feed management deficiencies.

#### Clinical signs of mycotoxin exposure in poultry may include the following:

- GI issues
- Organ damage, particularly liver and kidneys
- Immunosuppression

Oral ulcers and crusts occurring on the palate or tip of the tongue and oesophagus can occur with exposure to mycotoxins, including aflatoxin and mycotoxins produced by Fusarium toxins, such as the trichothecenes T-2 toxin (T-2), deoxynivalenol (DON).

Diagnosis of mycotoxicosis can be done by:

- History; clinical signs
- Mouldy feed
- Detection and quantification of specific mycotoxins

Material Name	MULTITOXIN RANGE							
	AFLATOXIN	OCHRATOXIN	FUMONISION	Zearalenone	DON	T2HT2		
Any Feed Samples			•					
BROILER FEED								
FISH FEED		If concern, should test all mycotoxins						
LAYER FEED								
CATLLE FEED								
FEED OTHER								
COPRA (PRODUCTS)								
DORB								
RAW RICE BRAN(RRB)								
COTTON SEED MEAL/DOC								
GUAR MEAL								
MAIZE								
MAIZE DDGS								
MAIZE GLUTEN MEAL								
MAIZE OTHER PRODUCTS								
PALM KERNEL MEAL								
GROUND NUT (PRODUCTS)								
RAPESEED MEAL								
RICE BRAN (DEFATTED)								
RICE PRODUCTS								
SOYA DOC								
SOYA-OTHER								
SUNFLOWER MEAL1								
WHEAT								
WHEAT BRAN3								

Feed and ingredient samples should be properly collected and promptly submitted for analysis.

Prevention of Mycotoxicosis can be done by using Mould-free feed and ingredients implementing good agricultural practices and management practices.

3 D approach for Mycotoxin Risk Management: Using a broadspectrum mycotoxin binder would help farmers mitigate the risk of multiple mycotoxins. TOXO-XL offers a total solution against a broad spectrum of toxins produced by moulds, TOXO-XL forms part of an integrated approach at supporting health of livestock and poultry to maintain health status and performance during exposure to mycotoxins. TOXO-XL is designed for all poultry, dairy and pig species and contains multiple mechanisms to help support the animal in dealing with mycotoxins. TOXO-XL consists of an effective aflatoxin binder and specific ingredients that support gut wall integrity and the immune system.



TOXO® XL is based on 3 pillars of protection:

- 1. Mycotoxin binding
- 2. Gut wall protection
- 3. Immuno modulation

Benefits of 3-D approach byTrouw Nutrition's Toxo-XL:

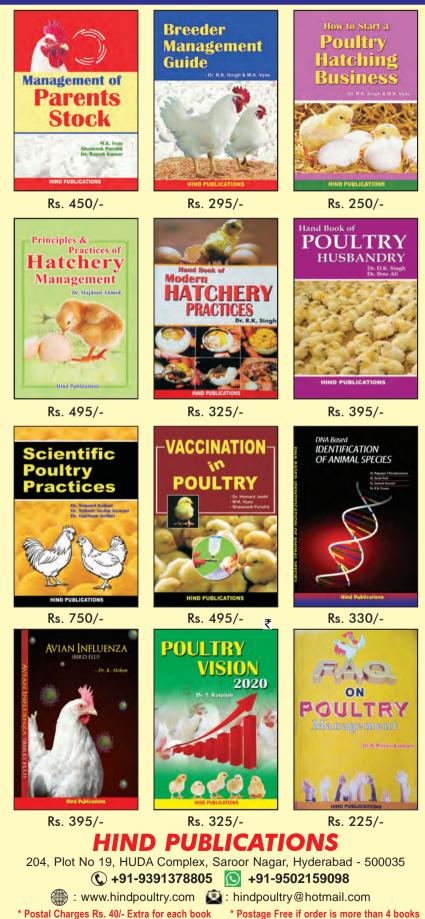
- Binds and eliminates mycotoxins.
- Strengthens intestinal barriers.
- Modulatesimmune response.
- Mitigates animal performance impairment caused by exposure to mycotoxins.

Highly layered smectite clays present in Toxo-XL have high aflatoxin binding. It binds with other polar mycotoxins and LPS.Glucose biopolymers protect the tight junctions and Beta glucans provide immunity.This is the threedimensional way of mycotoxin risk management.

Inconclusion, mycotoxins are silent thieves that eat away profits in livestock and poultry production by affecting performance and health. It is important to routine scan raw materials and finished feed to take appropriate actions.

It is impossible to have one silver bullet to bind and eliminate all mycotoxins, emerging mycotoxins and counteract the immunosuppression caused by synergies and interactions of multiple mycotoxins.Hence, producers need to look at more integrated and holistic approach to counter multiple mycotoxin challenge. 3-D approach gives a more rational, scientific approach to negate the detrimental effects of multiple mycotoxin challenges in poultry and livestock production. 🐶

## **BOOKS FOR SALE**





#### Venkateshwara B V Bio-Corp Private Limited organised Technical seminars at Thalaivasal, Namakkal

VENKATESHWARA BV BIO-CORP PVT LTD organized twoTechnical seminarsfor commercial Layer Farmers on18<sup>th</sup>at Musiri and 19<sup>th</sup>January 2024 at Thalaivasal, Namakkal. The topic discussed during seminar-



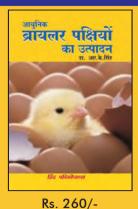
- Layer disease challenges and Vaccination updates
- The New way of Premixing and Innovative premix solutions
- Importance of water sanitation in Layer Industry.

Mr R.Murugesan, Zonal Manager, welcomed all attendees and introduced the speakers for thetechnical seminar.

Dr A.Kandasamy- AGM-Technical, discussed current disease challenges in commercial layers and proper vaccination for layer. He suggested to useof updated vaccines & control of mycoplasma to ensure sufficient protection against disease problems. This will also help to achieve desired performance. Dr Sambhaji Nimbalkar-Technical Manager, discussed regarding Premix and premixing technology. He elaborated benefits of homogenous premix and innovative premix solutions to simplify the feed manufacturing and also to avoid errors during feed production especially premixing. The innovative solution includes Mixiblend 0.4 % premix for Layers. Dr R. Venkatvasan-discussed importance of water sanitation. He suggested to regular monitoring of physical, microbial and chemical qualities of water. Benefits of continuous water sanitation, challenges in water sanitation and solution for this were also discussed.

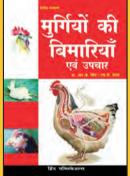
Dr A.Kandasamy and Dr Sambhaji Nimbalkar answered the queries of the attendees related to the subject and other technical queries regarding layer nutrition, Vaccination and management. The Technical Seminar was attended by Layer farmersof Musiri,Thalaivasal, Attur and surrounding areas. Local VHPLchick's sale team also helped for coordination and organization of these seminars. Mr R.Murugesan, ZonalManager proposed vote of thanks.

#### BOOKS FOR SALE











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## Acidomix DF+: An Unique Solution for Improved Productivity and Salmonella Control in Broilers and Layers

Christian Lückstädt, Addcon Asia Ltd, India.

rganic acids have long been used in animal nutrition, usually to stabilize compound feed, but also to enhance animal performance. In poultry one of the first reports of improved broiler performance when diets were supplemented with single acids was for formic acid (VOGT et al., 1981).Later, similar effects were noticed for fumaric acid (PATTEN et al, 1988; KIRCHGESSNER et al., 1991; SKINNER et al., 1991). IZAT et al. (1990a) found significantly reduced levels of Salmonella spp. in carcass and caecal samples after including calcium formate in broiler diets. In another trial from IZAT et al. (1990b), buffered propionic acid was used to counteract pathogenic microflora in the intestine and carcass of broiler chickens, and resulted in a significant reduction in *E. coli* and *Salmonella spp*. The use of pure formic acid in breeder feed reduced the contamination of tray liners and hatchery waste with S. enteritidis drastically (HUMPHREY et al., 1988). KIRCHGESSNER et al. (1992) found significantly better feed utilization in laying hens after adding fumaric acid, but only when the feed was low in protein and methionine and cysteine. Performance enhancement was influenced by both quantity and quality of the protein.Although growth performance benefits of organic acids and their salts have been shown in numerous studies over the past half-century, the significant increase in scientific and commercial focus shifted on it only after ban on antimicrobial growth promoters in Europe.

An important limitation, however, is that organic acids are rapidly metabolised in the foregut (crop to gizzard) of birds, which will reduce their impact on growth performance. A new molecule (sodium diformate, similar to potassium diformate) has been proven to be effective against pathogenic bacteria, including salmonella, along the whole gastro-intestinal tract (LÜCKSTÄDT et al., 2009). The reduced impact of pathogenic bacteria on the broiler, as well as the improved gut microflora, leading to a state of eubiosis in treated chickens, suggests that including sodium diformate in broiler diets will also result in improved bird performance. Several trials have also been carried out over the last half-decade world-wide that document positive effects on broiler performance.

It was therefore interesting to estimate the potential impact of sodium diformate (Acidomix DF+) in poultry production and *Salmonella* control through an analysis of the results of such trials.

### Effect of Acidomix DF+ on Broiler Performance

This study analyzed the average impact from all studies on the effect of the additive on the performance parameters weight gain, feed efficiency, mortality, and productivity, as measured using the European Broiler Index, (EBI). EBI is calculated using the following equation:

### EBI = ADG [g] × survival [%] / (10 × FCR)

The final dataset contained the results of 8 documented, negatively controlled studies, comprising 17 trials with DF+-inclusion, which ranged from 0.1% to 0.6%. Those studies were carried out between 2006 and 2012 across the world under both commercial and institutional conditions and included more than 36,700

broilers from different breeds (Arbor Acres, Cobb, Hubbard) raised to between 35 and 44 days. The abovementioned performance parameters are expressed as percentage difference from the negative control. The results are given as mean and were statistically analysed using the t-test. A confidence level of 95% was defined for these analyses.

The average level of dietary DF+ from the dataset in all treated broilers was 0.28%. Typical dosage for DF+ in broilers ranges from 1-2 kg/tone feed, depending on age (dietary protein level) and hygienic status of the farm. As shown in Table 1, DF+ inclusion resulted in a numerical increase in feed intake of 1.1% (P=0.22).

Table 1. Performance analysis of 17 trials with broilers, fed diets with Acidomix DF+, expressed as an average percentage difference from negative control.

Dosage	Feed intake	Weight gain	FCR	Survival	EBI
0.28	+1.1	+5.2	-4.1	+2.3	+12.4
P-value	0.22	0.0001	0.002	0.034	0.0005

The performance of broilers based on daily gain was significantly increased by 5.2% (P<0.001). Furthermore, the FCR was also significantly improved (4.1%; P<0.01). Survival was increased on average by 2.3% (P<0.05). Finally, the EBI improved significantly due to the inclusion of NDF by 12.4% (P<0.001). In broilers, improved zootechnical performance is thought to stem from both improvements in the intestinal microflora, as a result of suppressing pathogenic bacterial species, and improved protein digestion. As often seen with other additives, hygiene challenge also plays some role in the performance observed. In the present performance analysis, a range of hygiene conditions were included, representing both university and farm trials. The average impact of DF+ inclusion on performance remained above that normally expected. It can therefore be concluded that dietary sodium diformate (Acidomix DF+) can play an important role in improving broiler production world-wide, especially in times of high raw material prices.

### Effect of Acidomix DF+ on Salmonella Control

*Salmonella* ranks among the world's biggest threats to health. Annually, it has been estimated that cases of human salmonellosis in the United States may actually

vary from 2 to 4 million (Jones, 2011). Developing and implementing effective Salmonella monitoring, reporting and control systems is prioritised in many countries. Salmonella is often associated with poultry products, mainly chicken and eggs. Salmonella is widely distributed in nature (Winfield and Groisman, 2003) and can survive for an extended period of time on diverse materials (Humphrey, 2004). Since its discovery in the late 19th Century, more than 2,500 different serovars have been discovered. These have emerged over the past 30 years, in parallel with the development of intensive systems of animal husbandry. In the European Union, the proportion of Salmonella and E. coli isolates resistant to ampicillin, sulfonamides and tetracycline were found to vary between 5 and 68 % in poultry, pigs and cattle. Some Member States reported a high occurrence of fluoroquinolone resistance in Salmonella isolates from poultry (5-38%), (EFSA, 2010).

The risks posed by contamination with pathogenic bacteria in the food chain can be reduced without the prophylactic use of antibiotics. Applying appropriate control measures at intervention points in the food chain can help reduce the risk of Salmonella proliferation. While Salmonella cannot be fully eradicated in poultry units, it can be controlled to minimise the risk to consumers. According to Jones (2011) Salmonella control measures in feed can be divided into three major categories: prevent contamination of the facility; measures to reduce multiplication of the bacteria in the plant; and procedures to kill the pathogen. Biosecurity plays a significant role in Salmonella control. In feed compounding, although heat treatment is effective in reducing contamination of feed leaving the feed mill, this effect does not persist during transport, storage and subsequent out-feeding. When conditions within the feed are less conducive to bacterial infection, Salmonella contamination can be reduced. The next critical control point is within the bird, where conditions for bacterial growth are optimal. Salmonella growth is optimal between 35 and 37°C, with moisture content greater than 12% and a pH of 4.5-9.0. Jones (2011) suggests addition of chemical agents to the feed to control Salmonella. This may primarily involve the use of organic acids.

Since the 1980's, reports have shown organic acids, and formic acid in particular, to be especially effective against *Salmonella*, when used in poultry diets.

The use of pure formic acid in breeder diets reduced the contamination of tray liners and hatchery waste with *S. enteritidis* drastically (Humphrey and Lanning, 1988). By 1990, researchers in the US found significantly reduced levels of *Salmonella spp*. in carcass and caecal samples, after including calcium formate in broiler diets (Izatet al., 1990). Further research (Kovarik and Lojda, 2000) reported that inclusion of formic acid at 0.5% in the diet can be successfully used on farms to reduce salmonella contamination in the feed, excretion of *Salmonella spp*. and re-infection of chicken populations.

A number of practical considerations also need to be addressed. Pure formic acid, although it is very effective in controlling Salmonella in feed, is corrosive, hazardous, and volatile, so is difficult to handle easily and safely in the feed mill. Furthermore, pelleting may incur losses of around 15% of the acid. Often, liquid and volatile acids exert their antibacterial effects only in the feed and the birds' foregut. More recently, research has focused on overcoming these limitations to develop chemical compounds which are heat-stable, non-corrosive and yet still effective. Sodium diformate (Acidomix DF+, hereafter abbreviated as DF+) satisfies such industry requirements. An organic acid salt, it is crystalline and non-volatile, meaning that it can be used safely in the feed mill, as well as being effective in the animal.

A UK-study evaluated the anti-Salmonella effects of DF+ in vitro, against Salmonella enteritidis (SE)S9549/ 07 found in broiler flocks (Wales et al., 2013). Caecal and crop samples were taken from slaughtered broilers from small-scale commercial operations. Caecal contents were used fresh; crop contents were stored at -80°C and thawed before use. Both were mixed with quarter strength Ringer's solution (crop at a 1:1 ratio; caecal contents at 1:2). DF+ was added to 20g aliquots in tubes. These were incubated in a water bath for 10 minutes at 41.5°C, after which time a 0.1ml stationary phase SE culture was added. All preparations were vortex mixed and incubated at 41.5°C. After various time intervals (1, 4 or 8 hours for crop contents; 1, 4, 9 and 24 hours for caecal contents), 5g aliquots were taken, mixed with buffered peptone water (BPW) and prepared for Salmonella enumeration. SE counts were recorded as a log reduction, compared to the negative control.

The objective of the second study was to evaluate the effect of DF+ in broilers *in vivo*, on the control of bacterial contamination in the digestive tract in comparison to a negative control in-vivo (Lückstädt and Theobald, 2009). 1125 broilers were distributed in 9 batches of 125 birds each (5 batches in the treatment; control with 4 batches only). The broilers were fed the following program: starter diet for 21 days, grower diet for 18 days and finisher diet for 3 days only. Birds were treated with 0.3% DF+. After 39 days of treatment, before the finisher feed was given, 10 birds from each of the 3 treatments were taken for further microbial analysis and were screened for *Salmonella*.The collected data were analysed with ANOVA by the StatisticsXL program. A P<0.05 value was considered to be a significant result.

### In vitro study

Table 1 shows the log reduction in SE counts after application of sodium diformate at the manufacturer's maximum recommended dose (0.6%) to samples of crop or caecal contents; this dosage was used for the laboratory test. In practice lower dosages are used. There, and especially in broiler production the recommended dosage for an anti-*Salmonella* effect lies at 1-2 kg/t.

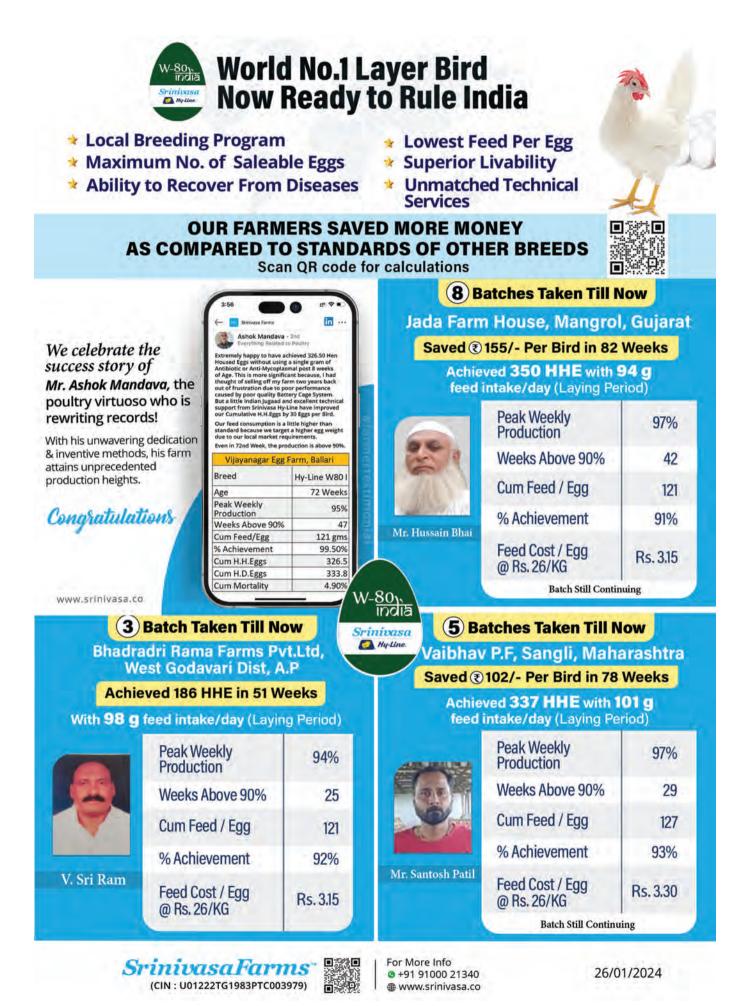
Table 2. Reduction in *Salmonella enteritidis*  $(\log_{10})$  over time in crop or caecal content treated with 0.6% DF+ (after Wales et al., 2013).

	1 h	4 h	8 h	9 h	24 h
Crop contents	3	>6	>6	n.d.*	n.d.*
Caecum contents	1	1	n.d.*	2	4

\*not determined

In the crop, exposure of inoculated crop contents to DF+ resulted in a log 3 reduction in SE counts after 1 hour, reducing further to >log 6 at both 4 and 8 hours. Anti-*Salmonella* activity in the crop, by rapidly reducing the crop pH and killing *Salmonella*, may be particularly suited to combating the ingested pathogen from various contamination vectors (feed, environment, litter, etc.).

In caecal contents, only log 1 reduction in SE count was observed after 1 hour incubation, reducing further to log 2 reduction after 9 hours, compared to the negative control. This effect was further pronounced after 24 hours' incubation, with a reduction in SE count of log 4. Since the retention time in the hindgut of chickens is



significantly longer, compared to the 'foregut' (crop, gizzard, proventriculus), the reduction in SE count after 24 hours may allow for a continuation of protection against the pathogen. The strong results with a reduction of up to 6 logs (see table above) suggest that also a lower dosage will show significant results, since it has to be mentioned that a reduction by log 2 means already 99% lower *Salmonella* levels. This approach was used in the *in vivo* study below.

### In vivo study

Results of the *in vivo* study are shown in Table 3 (Lückstädt and Theobald, 2009). No positive samples were found for *Salmonella* in the crop (P=0.15) or intestine (P=0.15) at 0.2% (the recommended commercial dose in case of a suspected pathogenic challenge).

Table 3. Results of sodium diformate (DF+) on *Salmonella* inhibition (% positive samples) in broiler chickens (after Lückstädt and Theobald, 2009).

Organs	Control	DF+ 0.3%
Crop (microbiol.)	20	0
Intestine (microbiol.)	20	0
Faeces (microbiol.)	25	0
Meat (serol.)	0	0

Further studies on the anti-*Salmonella* effect of DF+ were carried out in the Ukraine at the Animal Agriculture Institute of National Academy of Agricultural Sciences of Ukraine (2012). In that trial Cobb 500 birds were challenged with feed which contained 10<sup>9</sup> CFU/ml *Salmonella Typhimurium* (strain no. 371). The trial lasted for a period of 6 weeks. Organs of birds (heart, lung and spleen) as well as intestine and manure were tested for *Salmonella* in birds fed with (0.3%) or without DF+. After the trial the negative control had positive samples of *Salmonella* in all organs, the intestine, and the manure – whereas in the DF+ treated group the *Salmonella* was below the detection level.

The above stated trials are in-line with experience from users of DF+ in Europe and Asia. The product is used for its anti-bacterial action, against *Salmonella* or *E.coli*, for instance in Germany, UK and Spain – or if talking about Asia, e.g. in India or the Philippines. Here, customers use the recommended dosage for the anti-*Salmonella* effect of 3 kg/t as long as the thread of the bacteria is present. After that, the normal broiler dosage of 1-2 kg/t of finished feed is recommended. However, it has to be stated that the currently reduced threat with *Salmonella* in Europe – latest figures from the EU zoonosis report (EFSA, 2021) report only 60.000 cases of Salmonellosis in humans (which is a reduction from more than 131.000 cases in 2008 – EFSA zoonosis report 2010) cannot be alone accounted for the use of acidifiers like DF+, but has to be seen as a combination of increased biosecurity and improved management in general, which includes however the use of additives with anti-*Salmonella* action.

### Acidomix DF+ Helps to Improve Productivity in Layers

A meta-analysison its impact on broiler performance in Eastern Europe isavailable. However, its impact in layer production systems there wasyet to be thoroughly investigated.

This study analysed the average impact from all studies carried outin Eastern Europe on the effect of the additive on the laying rate of Lohmann Brown hens. The final dataset contained the results of 6trials with DF+-inclusion, which ranged from 0.1% to 0.15%. The total number of layers used in the trials was more than 200,000 and the bird age ranged from 48 to 78 weeks. Resultsof the meta-analysis are expressed as percentage difference from the negative control. A P<0.05 value was considered significant.

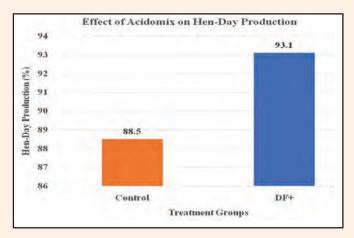
The average level of dietary DF+-inclusion from the dataset in all treated layers was 0.14%. The performance of layersbased on hen-day (HD) percentage was significantly increased by 5.4% (P=0.002), from 88.5% HD in the negative controlto 93.1% HD in the DF+groups. Furthermore, the uniformity was improved in the treated group (Table 4).

Table 4: Effect of Acidomix DF+ (DF+) on the hen-day percentage of Lohmann Brown hens (Metaanalysis based on 6 trials).

Control	DF+	Difference (%)	P-value	Age in weeks
88.5±2.9	93.1±1.0	5.4±2.6	0.002	59.5±10.5

Graph 1: Comparative analysis of hen-day production (%) in control and DF+ treatment groups in Lohman Brown layers.

A significant difference (P=0.02) in performance was noted between younger and older hens (Table 5): birds less than 55 weeks of age had only an improvement of 2.0% (P=0.02) against the negative control; hens above



55 weeks of age achieved a highly significant improved HD percentage of 7.7% (P=0.007).

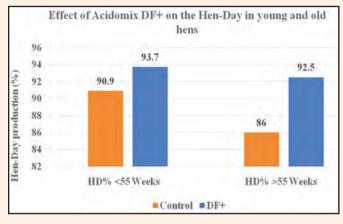
Table 5: Effect of AcidomixDF+ on the hen-day percentage (HD%) of young (<55 weeks) and old (>55 weeks) hens.

Age in weeks	Control	NADF	Difference(%)	P value
HD% <55 Weeks	90.9±1.1	93.7±0.8	3.0±0.9	0.019
HD% >55 Weeks	86.0±1.8	92.5±0.8	7.7±1.5	0.007

Graph 2: Comparative analysis of effect of Acidomix DF+ on hen-day production(%) in young and old hens.

### **Conclusions:**

Above studies clearly indicate the huge benefits of using organic acids (Acidomix DF+) in broilers as well



as layers. Some of the key take aways from these studies are as follows:

- A. Inclusion of Acidomix DF+ showed significant increase in weight gain in broilers compared to control groups.
- B. Inclusion of Acidomix DF+ showed significant decline in %mortality and FCR in broilers compared to control groups.
- C. Acidomix DF+ inclusion showed significant reduction of Salmonella in crop and caeca of the birds conferring long term protection against Salmonellain vitro as well as in vivo.
- D. Inclusion of Acidomix DF+ showed significant increase in hen-day production in late lay (post 55 weeks) stage.

### AAHP-2024 : 5<sup>th</sup> Biennial Poultry Health Conference and National Symposiumon "Poultry Health : Current Challenges and Future Strategies" 23-24 February 2024, Hyderabad, India

The V Biennial Poultry Health Conference of the Association of Avian Health Professionals (AAHP) and National Symposium (AAHP-2024) is being organized by ICAR-Directorate of Poultry Research, Hyderabad and AAHP during 23<sup>rd</sup>-24<sup>th</sup> February, 2024. The theme of the conference is "Poultry Health: Current Challenges and Future Strategies". The venue is at the Auditorium of PJTS Agricultural University, Rajendranagar, Hyderabad.

A comprehensive scientific program, scientistsindustry interface and plenary session have been scheduled for this conference. Broadly, the deliberations would be on emerging and re-emerging poultry diseases, vaccines, antimicrobial resistance, gut health, mycotoxins, biosecurity, disease control and food safety. A modest gathering of about 300-350 delegates and officials are expected to participate in deliberations. Eminent speakers from abroad and from India in the field of poultry health are identified for the conference. AAHP cordially invite poultry health scientists, researchers, veterinarians from Government and private organizations, industry personnel, farmers, policy makers and students to participate in this crucial event for exchanging scientific and technical knowledge and further, interact with eminent scientists and industry experts in the field of poultry health, welfare and food safety. The Conference will facilitate knowledge dissemination of great interest and vivid scientific discussions, as well as stimulate a creative exchange of ideas.

Registration				
Category	Before 31 <sup>st</sup>	After 31 <sup>st</sup> January 2024		
	January 2024	& spot registration		
AAHP Life members	Rs 5000	Rs 5500		
Non AAHP members	Rs 6000	Rs 6500		
Students	Rs 3000	Rs 3500		
Foreign delegate	USD 100	USD 125		





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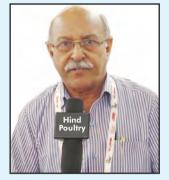
# Mycotoxins and the Damage they do to Poultry is not Easy to Understand

Prevalence of mycotoxins and their risk in Poultry varies between regions, countries and cities, depending upon the environment, agricultural practices followed and the transportation and storage conditions maintained.

The poultry production industries regularly suffer from a complex situation, uncertain end products market and nonremunerative rates for their produce, leaving the farmers with insufficient funds to buy quality feed ingredients, leading to feeding of substandard items and inviting trouble.

Many Scientists, Experts, Veterinarians and Farmer's will not agree with me, but the fact is, more than 85 % of the field problems in poultry industry today, that are often diagnosed (rather mis-diagnosed) as viral, mixed infections, mal-nutrition or deficiencies mis-management, or blamed as poor chick quality with genetic bias, are in fact all related to the presence of various co-existing multiple mycotoxins and/or their metabolites in the feed ingredients and the feed being used and the consequent damage done and confusion created. These mycotoxins and their metabolites when ingested,

first damage the GI tract, from beak to the cloaca, mycotoxins interfere and impair the rapidly dividing cells lining the GI tract responsible for its repair and integrity leading to increased permeability, intestinal inflammation leading to loose droppings, birds feed intake may or may not reduce, presence of mycotoxins also alter the microbiological populations present in the GI tract, then unwanted feed items like the toxins, mycotoxin metabolites, tannins, endotoxins, bacteria, viruses and parasites pass through the damaged GI tract into the blood, disturb the metabolism, enzyme and hormone production by causing damage to the liver, kidneys, pancreas and several other organs, this damage is continuous, simultaneously cause, hematotoxicity, neurotoxicity and immuno-suppression etc., resulting in vaccine failures, reduced blood flow to the extremities like comb (shrunken combs) and feet leading to leg weakness and paralysis, poor disease prevention and control, increased mortalities, loss of egg



**Dr. S.K.Maini** Gen. Manager (Technical) Vesper Group, Bengaluru.

production, less than optimum overall performance and financial losses to the farmers/producers, simultaneously giving opportunities to unscrupulous business houses and companies to promote their products and make money.

The signs, symptoms and lesions picture of damage done in the flocks is always changing, as the situation is dynamic, the fungal spores, the fungus and the already produced mycotoxins and their metabolites, keep increasing/ changing, depending upon the prevalent environmental conditions and the preventive action taken ..

The negative effects, damage and susceptibility to different mycotoxins also differs in bird species, with their age, sex, level of production and activity, duration of contaminated feed ingestion etc.. Like Turkeys and Ducks are more



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Y. Ram Mohan Rao Managing Director (Mob: +91 94904 10562) Dr. Sreekanth Devalraju Manager (Mob: +91 94410 31794) susceptible to aflatoxins than the chicken, the drop in egg production that we see in the layers and breeders will not be their in the chicks and growers. Recent multimycotoxin surveys conducted worldwide by various multinational indicate companies, that mycotoxins do not occur individually and co-contamination of feed ingredients by more than one mycotoxin is the rule rather than an exception today.

The DSM World Mycotoxin Survey 2022, reported a total of 850 samples tested from 39 countries. It was reported that 9.6 out of 10 samples were contaminated with Fusarium toxins. 98 % of the samples tested contained 10 or more (multiple) mycotoxins and their metabolites.

Kemin 2021 – 22, evaluated 198 corn samples for mold species. Since harvest, the most common mold found was Fusarium spp., and 97% of the corn samples submitted for testing had Fusarium mold and their related toxins. A Seven-Year Survey of Corn Grain and Corn Silage in the United States reported simultaneous Co-Occurrence of 35 different Mycotoxins.

Alltech - 2022, analysis assessed mycotoxin risk in Europe, and opined that drought conditions contributed to high levels of mycotoxins in grains leading to 100% of the collected samples containing mycotoxins. BIOMIN Mycotoxin Survey stated Risk is extreme (high) this year in Southeast Asia and East Asia compared to the risk during same time period of last year, also reported abundance of Afla, ZEN, DON, FUM and T-2 toxin in the feed ingredients tested. Maize (Corn) stays heavily contaminatedworldwide, with very high level of Fusarium toxins (FUM 90%, DON 80%, ZEN 71%) and high average concentrations of these three mycotoxins (FUM 1,824 ppb; DON 1,041 ppb and ZEN 234 ppb).Cooccurrence of the mycotoxins is also very high, 94% of all samples contained more than one mycotoxin and its metabolites.

From a global perspective the Fusarium mycotoxins trichothecenes, T - 2/ HT-2 toxin, deoxynivalenol, fumonisins and zearalenone are most frequently found mycotoxins in several feed ingredients and the finished feeds, ranging between 50 to 90 % of the feed samples tested.

Please note no such extensive survey has been conducted in India till date, to monitor the extent and presence of the mycotoxins and their metabolites and the damage they do to the poultry producers. We do not have adequate facilities and well equipped laboratories to regularly analyse and moniter this situation, that causes damage worth crores of rupees every year, making the poultry sector inefficient and non profitable.. Then there is a group of emerging mycotoxins, that are not often analyzed or regulated, and no one knows how to reduce or control them. Given below is a partial list of the emerging mycotoxins.

Another group of mycotoxins that needs to be seriously looked into are the masked mycotoxins, the below given list, gives details of a few of them. Sub-Clinical mycotoxicocis is another problem difficult to identify, diagnose and treat, and equally difficult to convince the farmers of their presence. Adding a toxin binder in the feed, will take care of the mycotoxins related problems, is a common belief/myth among the farmers and the Veterinarians, Nutritionists and the Consultants. This is not true. Toxin Binders mostly used in poultry are of the following types.

### Clay Type

Several types of products are available in the market, called"toxin binder", they reduce the risk of mycotoxins in the feed. The active substances in these products are distinctly different. Their functions are described as follows:

Phylosilicates are commonly named "clays", which are broadly defined as mineral components with a diameter less than 2 im. The most common used clays for animal feeding are smectite, kaolin, talc, sepiolite and atapulgite. The latter are classified according to structure and mineral composition. They normally show laminate structure, except sepiolite and atapulgite, which are pseudo-laminate or tubular.

### Non-Clay Type

There are non-clay based silicates, such as zeolite (tectosilicates), diatomea sand (from organic origin), perlite and vermiculite (from volcanic origin), arealso used as toxin binders. Indirectly, such molecules are able to bind the toxins' reactive polar groups, therefore avoiding their diffusion into the medium.

### POLYSACCHARIDES

•

They are glucomannanes components obtained from the structural wall of yeasts. Their surface is very reactive against active mycotoxin groups and improves the animal's immune system. Natural compositions present a huge capacity for resistance to digestive degradation; therefore bonded mycotoxins are not reabsorbed inside the animal.

**ENZYMES** : Oxidases, catalases, lactonases and sterases can all potentially reduce mycotoxins to inactive forms. Unfortunately there is only a small amount of scientific literature to prove their efficiency.

**OTHER ADSORBENTS :** There are certain distinct absorbents capable complexing molecules with phenol rings, and acid or alkaline toxin complexes such as mycotic toxins, thanks to the reactivity and amphoteric properties of their molecular structure. Some of the latter molecules can be especially effective against toxins of bacterial origin, e.g. botulinus toxin. All the above components are able to significantly reduce the mycotoxin concentration in feed. Additionally, it is recommended to include antioxidants and hepatic protective elements (organic selenium, vitamin E, ascorbic acid, glutathione, methionine and cystine, etc.) in order to minimize the residual toxins' negative and toxic impact. A combination of all the above mentioned in sufficient quantity will give better results than if used alone. Regular monitoring of the mycotoxins in relation to the season, storage and environmental conditions be done. 🔒

### Dr. Raghavendra Bhatta assumes charge as the Deputy Director General, Animal Science ICAR, New Delhi



Dr Raghavendra Bhatta, **Director** of the National Institute of Animal Nutrition and Physiology, Bangalore has assumed the charge as the Deputy Director General (Animal Science), ICAR, New Delhi . A doctorate in Veterinary Science with specialization in Animal Nutrition from Veterinary College Bangalore had an excellent academic career bagging gold medal both in Masters and Doctorate programme. He was the recipient of the prestigious Japan Society for the Promotion of Science (JSPS) postdoctoral Fellowship and completed two years of post-doctorate research NILGS, Tsukuba, Japan. Dr Bhatta has also competed post-doctoral training at USDA, Texas in 2011.

He started his career from M/ s. Mysore Feeds Limited, Bangalore before joining ICAR-Central Sheep and Wool and Wool Research Institute, Rajasthan as Scientist in 1993. In 2003, he was transferred to the ICAR-National Institute of Animal Nutrition and Physiology (NIANP), Bangalore. He was selected as the Director of ICAR-NIANP during 2014. During his tenure he has developed many stateof-the art infrastructure facilities at NIANP such as Centre for Laboratory Animal Research, Centre for Climate Resilient Animal Adaptation Studies, community hall, students hostel and a miniauditorium. He was also instrumental in getting several international collaborative projects such as Indo-German, Australia-India Council project, Indo-Japan, Indo-French ECLIPSE Project, ILRI, IAEA project, etc. Dr Bhatta was the Coordinator of the AICRP, Network project on methane, Principal Investigator of an Indo-German and ILRI project. Recognising the contribution, the institute was bestowed with the prestigious Sardar Patel Outstanding Institute Award in 2021.

Dr Bhatta is the distinguished Fellow of the National Academy of Agricultural Sciences, the Karnataka Science and Technology Academy, the National Academy of Veterinary Science, and the National Academy of Dairy Sciences - India. He is recipient of several research awards including the prestigious Sir CV Raman State Award from the Karnataka State Council for Science and Technology, Govt. of Karnataka, and Rafi Ahmed Kidwai Award for Outstanding Research in Agricultural Sciences, 2019 by ICAR. He has published more than 150 research papers in journals and presented more than 140 papers in conferences of national and international repute and has authored 3 books, one in Cambridge University Press, and two in Springer. Has written 45 chapters in books, He has three patents to his credit and guided three PhD students. He is recognized as one of the world's top 2% scientists by the Stanford University analysis during 2020; 2021;2022; 2023. 🔒

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### Introducing Horti Agri Next (HAN) ASIA 2025: Elevating the Horticultural and Agricultural Trade Platform for Asia

**VNU Exhibitions Asia Pacific,** renowned for its expertise in organizing successful trade fairs and conferences in Southeast Asia, is thrilled to announce the launch of HAN ASIA 2025, a trade exhibition dedicated to Horticulture and Agriculture that covers the entire supply chain.

With the strategic re-branding of horticultural and agricultural exhibitions in Asia, VNU Exhibitions Europe and VNU Exhibitions Asia Pacific are positioned as the leading and complete Seed to Food trade hub for Asia Pacific and beyond. With the launch of HAN ASIA, VNU Exhibitions Asia Pacific simultaneously introduces regional satellite events in the countries of Vietnam (May 2024) and Indonesia (September 2025), co-locating the events under the name HAN Select, with the successful livestock trade shows of the ILDEX Series.

The new international platform for Asia, HAN ASIA, will be held during March 12-14, 2025 at IMPACT, Bangkok, Thailand, parallel to VIV Asia 2025, focusing on the latest products, innovations, and advances in the fields of horticultural food production, landscaping, controlled environment practices, environmental conservation, arable land planting, harvesting, and processing of crops, as well as land and water resources management and new enhancing technologies. The fusion of HAN ASIA and VIV Asia creates Asia's largest Agri-food trade fair – a powerful collaboration of innovation and excellence.

HAN ASIA follows the success of HAN MEA 2023 that took place in Abu Dhabi, UAE from November 20-22, 2023, in co-location with VIV MEA 2023 and was organized by VNU Exhibitions Europe. With 10,080 visitors from 113 countries and nearly 500 exhibitors from around 50 nations, the events showcased the global interconnectivity of the animal husbandry and the agribusiness industry. Spanning five halls at Abu Dhabi's ADNEC venue, the exhibitions covered over 17,500 sq.m. of space, drawing attendees not only from the UAE, but also from countries such as Egypt, Iraq, Iran, Pakistan, and Saudi Arabia. The remarkable 67% interest overlap between the co-located events underscored the dynamic networking and information exchange that characterized this triumphant showcase.

"HAN MEA was a testament to our commitment to promoting innovation and collaboration within the agricultural and horticultural sectors in the Middle East and Africa and across the different regions in which we operate. Our decision to extend this initiative to Asia with HAN Asia and the satellite HAN Select events stems from the positive impact witnessed in the MEA region and the growing potential we see." stated Ms. Birgit Horn, Managing Director of the Agrifood Portfolio of VNU Exhibitions Europe. "Since the first launch of Horti Asia in 2012, we have always been fully committed to the horticultural industry, its community, and its professionals and experts, while working closely together and supporting the development of Asia's horticultural industry. We also introduced Agri Asia in 2015 in order to cover the entire supply chain. In close collaboration with the industry, we work hard and are eager to be the premier platform and our mission for Thailand and Asia will continue" said Ms. Panadda Kongma, Vice President Business, VNU Exhibitions Asia Pacific.

"The decision to rebrand and launch HAN ASIA 2025 has been made as the horticulture and agricultural sectors are fundamental pillars of the company's strategic roadmap and our global direction. We are thrilled to introduce the launch of this new brand at our home base and the ideal gateway to Asia, Bangkok, Thailand. HAN ASIA 2025 will continue to bring opportunities, innovations, solutions and knowledge from around the world to Asia" added Mr. Igor Palka, Managing Director, VNU Exhibitions Asia Pacific.

Upcoming Calendar:				
HAN Select Vietnam May 29-31, 2024		Ho Chi Minh City, Vietnam		
HAN ASIA	March 12-14, 2025	Bangkok, Thailand		
HAN Select Indonesia	September 17-19, 2025	Jakarta, Indonesia		
HAN MEA	November 25-27, 2025	Abu Dhabi, UAE		

### About Horti Agri Next Asia (HAN ASIA)

HAN ASIA is the Horti Agri Next hub edition tailored specifically for the Asian market, showcasing the latest in horticultural food production, landscaping, controlled environment practices, environmental conservation, and agriculture. HAN ASIA brings together industry professionals and experts from across Asia and around the world. Join us at HAN ASIA to explore the forefront of the Asian horticultural and agricultural industries. For more details, please visit the official website at **WWW.HORTIAGRINEXT.COM.** 

### **VNU Exhibitions Asia Pacific**

VNU Exhibitions Asia Pacific is part of VNU Group, a globally operating exhibition company with offices in Utrecht, Shanghai, Bangkok and consolidates the international exhibition business of Royal Dutch Jaarbeurs. In Southeast Asia, Jaarbeurs formed a Joint Venture with TCC Group, a leading corporate conglomerate in the fast-growing region. From its business hub located in Bangkok, VNU Exhibitions Asia Pacific covers all key exhibition markets in Southeast Asia. | www.vnuasiapacific.com

### About VNU Exhibitions Europe

VNU Exhibitions Europe is a subsidiary company of Royal Dutch Jaarbeurs with its base in Utrecht, at the heart of the Netherlands and only 30 minutes from Amsterdam. The VNU Exhibitions Europe office is located within the extensive Jaarbeurs complex. The international team is wholly involved in the agrifood sector, focusing on the organization of worldwide industry events such as VIV, Horti Agri Next and AgriBITs. VNU's Utrecht team organizes shows in the Netherlands, the United Arab Emirates, China, Thailand, Turkey and Africa. For more information, visit www.vnueurope.com

### **Press Contact:**

Mrs. Saengtip Techapatiphandee, Marketing & Communications of VNU Asia Pacific

Email: saengtip@vnuasiapacific.com | Tel.: +662 111 6611 Ext.330 | www.vnuasiapacific.com

### Egg Exports to Russia from Namakkal only at the Primary Stage

- Talks regarding the exporting of eggs to Russia are still in the primary stage.
- 2. Due to the war with Ukraine and other factors, egg production in Russia has significantly decreased.
- Russia may need to import eggs from other countries, including India, and Namakkal could take advantage of this opportunity.
- 4. There are many processes, including trade policies, certification process, quality standards, and many terms and conditions, that are to be discussed and finalized.
- 5. The latest information says that egg production is now better in Russia.
- 6. The major demand of poultry owners are incentives for egg exports as the price of eggs is changing everyday.
- 7. There was a long-pending demand to declare Namakkal an avian influenza disease-free zone, because an outbreak of bird flu in any part of the country would affect the export of eggs from Namakkal.
- Declaring Namakkal an avian influenza disease-free zone will save poultry owners from losses.
- 9. Tamil Nadu is the second largest producer of eggs in the country after Andhra Pradesh.
- In terms of exports, Namakkal is first place in India with a major part of its table eggs being exported.



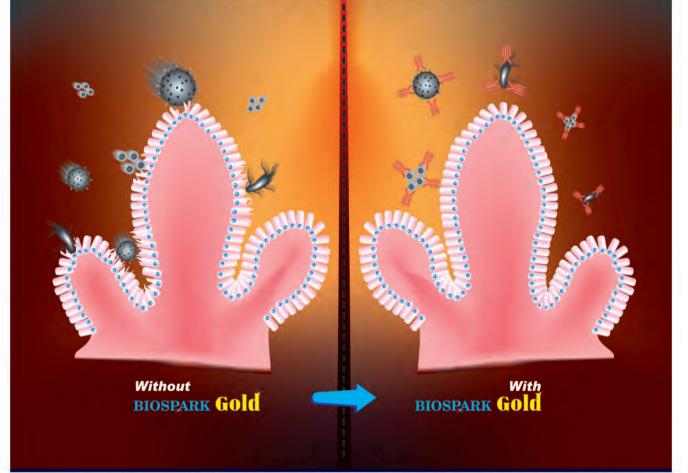
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