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From the Editor's Desk

## **Budget 2025: A Turning Point for** the Poultry Industry?

The 2025 budget brings a mix of opportunities and challenges for the poultry industry. With rising feed costs, market fluctuations, and disease outbreaks, poultry farmers have been under pressure. This year, the government has stepped up with subsidies on poultry feed, veterinary care, and farm equipment, along with low-interest loans for small and medium enterprises. These initiatives could help many farmers expand and modernize their operations.

Tax relief on farm machinery and poultry feed is another positive move, making production more cost-effective. Large-scale processors will benefit from incentives for cold storage and automation, potentially increasing exports. However, small farmers must not be left behind. Fair pricing and direct market access should be prioritized to ensure equal opportunities for all.

A major focus in this budget is biosecurity and disease prevention. Bird flu and other outbreaks have caused heavy losses in recent years. Stricter biosecurity measures and vaccination programs are necessary to protect the industry. While initial compliance costs may rise, the long-term benefits far outweigh the risks.

Sustainability is another key area. The government is encouraging eco-friendly poultry farming with incentives for solar energy, waste recycling, and water conservation. While these are positive steps, their success depends on easy adoption without financial strain on farmers.

The real challenge lies in implementation. Policy delays can hinder progress, and farmers need timely support. The industry, along with policymakers, must work together to ensure benefits reach those who need them most.

If executed well, these measures could strengthen the poultry sector, making it more resilient and competitive. The road ahead isn't easy, but with the right strategies, 2025 could mark a new chapter for Indian poultry. Let's seize the opportunity!

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#### Content







**Siddhi Gupta** Co-Editor

# Al and Automation in Poultry Farming

The poultry industry, a backbone of global food production, is undergoing a transformation unlike any other. Thanks to advancements in Artificial Intelligence (AI) and automation, poultry farming is becoming more efficient, sustainable, and resilient. As the world's population continues to grow, feeding billions of people while reducing environmental footprints is a challenge that the poultry industry is rising to with the help of cutting-edge technology. In this article, we explore how AI and automation are revolutionizing poultry farming and what the future holds for this essential sector.

#### The Changing Face of Poultry Farming

Traditionally, poultry farming has been a labor-intensive industry, requiring extensive manual labor for feeding, monitoring animal health, cleaning, and managing production cycles. However, with increasing demand for poultry products and the rising costs of labor, farmers have had to look for smarter ways to boost productivity while maintaining the welfare of their birds.

Enter AI and automation technologies that are now being integrated into poultry farms around the world. These innovations offer farmers new ways to improve productivity, reduce costs, and meet the growing demand for poultry products. But beyond the economic benefits, AI and automation also promise to improve animal welfare, reduce environmental impacts, and ensure that food production meets global sustainability goals.

#### How AI is Transforming Poultry Farming

AI, the simulation of human intelligence in machines, is finding numerous applications in poultry farming. From managing flock health to optimizing feed usage, AI is helping farmers make datadriven decisions that were once unthinkable.

#### 1. Smart Monitoring of Animal Health

Al-powered systems are revolutionizing how poultry farmers monitor the health of their flocks. Traditionally, detecting health issues in poultry required regular manual checks and intervention by veterinarians. Today, sensors and cameras, combined with Al, can monitor the birds' behavior in real-time, detecting early signs of illness, stress, or abnormal behavior that might indicate a health problem.

For example, Al-driven cameras can analyze the movements and posture of birds, identifying changes that may indicate respiratory problems or other diseases. Al algorithms can also analyze patterns in the birds' body temperature, heart rate, and activity levels, helping farmers detect illnesses before they spread throughout the entire flock. This early detection allows for timely intervention,



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reducing the need for mass culling and preventing the spread of disease.

### 2. Precision Feeding and Waste Reduction

Feeding is one of the most significant costs in poultry farming. Traditionally, poultry farms use a one-size-fits-all approach, with each bird receiving the same amount of food. However, this method can lead to overfeeding or underfeeding, both of which can affect bird health and farm profits.

Al and automation are helping optimize feeding practices. By using data from sensors, Al can calculate the precise amount of feed each bird needs based on factors such as age, weight, and health status. Automated feeding systems can deliver the right amount of food to each bird at the right time, reducing waste and ensuring that the birds receive balanced nutrition.

This not only reduces costs but also supports more sustainable farming practices by minimizing feed waste and reducing the environmental impact associated with food production.

#### 3. Climate Control and Environmental Management

Poultry farming is highly sensitive to environmental factors like temperature, humidity, and air quality. Poor environmental conditions can lead to stress in birds, which affects their growth and productivity. Maintaining optimal conditions in poultry houses can be challenging, especially in large-scale operations.

Al-powered environmental control systems are now being

used to monitor and adjust conditions in real-time. These systems collect data from sensors placed throughout poultry houses to continuously monitor air quality, temperature, humidity, and light levels. Al algorithms analyze this data and make real-time adjustments to ensure that the environment remains within the ideal range for the birds.

This automated climate control reduces the need for human intervention, ensuring consistency and improving the overall health and welfare of the flock. Furthermore, these systems can help reduce energy consumption by optimizing heating, cooling, and ventilation, leading to significant cost savings and a reduced carbon footprint.

#### **Automation in Poultry Farming**

While AI is a powerful tool in poultry farming, automation plays an equally important role. Automation refers to the use of machines and technology to perform tasks that were once done by humans, thereby increasing efficiency and reducing labor costs.

#### 1. Egg Collection and Sorting

In large commercial poultry farms, collecting and sorting eggs can be a tedious and labor-intensive task. Automation has changed this process dramatically. Automated egg collection systems use conveyor belts and robots to collect eggs directly from the laying nests, reducing the need for workers to manually collect and handle eggs.

Once the eggs are collected, automated sorting systems can sort them based on size, weight, and quality, ensuring that only the best eggs are packaged and sent to market. This improves both efficiency and egg quality while reducing the risk of human error or damage to the eggs.

#### 2. Poultry Processing Automation

In the processing phase, automation is improving speed and efficiency while maintaining hygiene standards. Automated systems are used to carry out tasks such as slaughtering, cleaning, and packaging poultry products, reducing the need for manual labor and minimizing the risk of contamination.

Robots are increasingly used to perform repetitive tasks such as cutting, deboning, and packaging chicken, ensuring precision and reducing the likelihood of injury to workers. Automation also helps maintain high standards of food safety by ensuring that equipment is sanitized regularly and the processing line operates smoothly.

### 3. Poultry House Cleaning and Maintenance

Another critical area where automation is making an impact is in the cleaning and maintenance of poultry houses. Automated systems are now available to clean and disinfect poultry barns, reducing the labor needed for this task and improving biosecurity standards.

For example, automated systems use robotic cleaners to sweep and scrub floors, while drones are used to inspect hard-to-reach areas for cleanliness and maintenance issues. This reduces human



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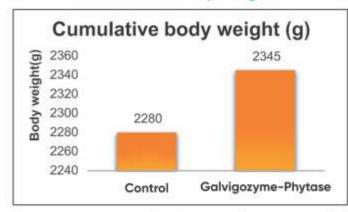
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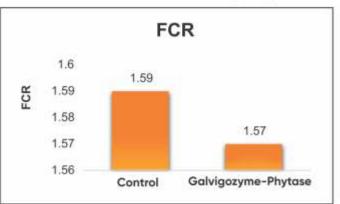
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exposure to potentially harmful pathogens and ensures that the poultry houses are kept clean and hygienic without human intervention.

### The Environmental and Ethical Benefits of AI and Automation

As the demand for poultry products increases, it is essential that the industry addresses environmental concerns and ethical considerations. Al and automation are helping to meet these challenges head-on.

#### **Sustainability**

With the world's growing population, there is increasing pressure on the poultry industry to produce more with fewer resources. Automation systems help farmers use water, feed, and energy more efficiently, contributing to more sustainable farming practices. Al can track resource usage across farms and optimize how water and energy are distributed, reducing waste and lowering the farm's carbon footprint.

#### **Animal Welfare**

Al and automation are also playing a vital role in improving animal

welfare. Automated systems can monitor birds' health and comfort more accurately than human workers, allowing for earlier intervention when a problem arises. These technologies ensure that the birds live in optimal conditions, with the right temperature, humidity, and space to move around.

Moreover, AI systems can help reduce the use of antibiotics by detecting illnesses early and enabling farmers to treat only affected animals, rather than administering antibiotics to entire flocks. This has positive implications for both animal welfare and public health, as overuse of antibiotics in poultry farming can lead to antibiotic resistance.

### The Future of AI and Automation in Poultry Farming

As AI and automation technologies continue to evolve, their role in poultry farming will expand. Future advancements may include fully automated poultry farms, where every aspect of production, from feeding to health monitoring and processing, is managed by AIdriven systems. These innovations will help farmers address challenges such as labor shortages, rising costs, and growing environmental pressures.

The integration of AI with other technologies, such as blockchain, could also provide greater transparency in the food supply chain, allowing consumers to trace the origins of their poultry products and ensure they were produced ethically and sustainably.

#### Conclusion

Al and automation are not just buzzwords-they are reshaping the poultry farming industry in profound ways. From improving animal health and reducing environmental impact to increasing efficiency and productivity, these technologies are making poultry farming smarter, more sustainable, and more humane. For farmers, these advancements offer a new way to meet the growing global demand for poultry products while adhering to higher standards of animal welfare and environmental stewardship. The future of poultry farming is here, and it's driven by AI and automation.





\*1 FCR point represent third/last decimal point of 1000

"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<sup>TM</sup> MS was compared with antibiotic/probiotic/antibiotic + problotic/probiotic + prebiotic control. Detailed reports available on request.



Parth Rai Gupta Co-Editor

# Avian Influenza Outbreaks: A Global and Indian Perspective

The world has witnessed several outbreaks of avian influenza (AI) in the past few decades, with significant repercussions for the poultry industry, economies, and even public health. While AI primarily affects birds, its transmission to humans remains a constant concern. The recent outbreaks have underscored the need for stronger vigilance, better response strategies, and international cooperation to prevent the spread of this deadly virus. In this article, we explore the global impact of avian influenza outbreaks and how India, with its vast poultry sector, is being affected.

#### What is Avian Influenza?

Avian influenza, also known as bird flu, is a viral infection that primarily affects domestic and wild birds. The disease is caused by the H5N1 virus, though other strains such as H7N9 and H9N2 have also emerged. It spreads rapidly in poultry farms, particularly where birds are kept in close confinement. Though the virus mainly affects birds, some strains can jump from animals to humans, posing a threat to public health.

Most avian influenza outbreaks are contained to the poultry population, but a handful of human cases have raised alarm. The most well-known human transmission of AI occurred during the H5N1 outbreaks in the early 2000s. While humanto-human transmission remains rare, the possibility of a new strain emerging that could trigger a pandemic is a constant worry.

#### Global Impact of Avian Influenza

#### **Economic Consequences**

The global economy is hit hard every time an avian influenza outbreak occurs. Poultry farming is a multibillion-dollar industry, and countries with large poultry markets suffer immensely. The most immediate impact is the culling of infected birds to prevent further spread. While this is necessary for controlling the virus, it leads to significant losses in the poultry industry. In addition to the loss of birds, there are costs related to cleaning and disinfecting farms, surveillance, and testing.

Countries that are major poultry exporters experience a steep decline in trade. International markets impose bans on imports from regions affected by AI, disrupting the flow of goods. The World Bank estimates that the 2004 outbreak of H5N1 alone cost the global economy between



\$10 billion and \$15 billion.

Beyond poultry farming, other sectors are impacted, such as tourism and hospitality. Many tourists avoid regions where avian influenza is prevalent due to fears of human transmission, further hurting local economies that rely on tourism.

#### **Public Health Threats**

While human cases of avian influenza are relatively rare, they remain a constant threat. The H5N1 strain, for instance, has infected hundreds of people across Asia, Africa, and Europe. Though the mortality rate is high, human-to-human transmission is still uncommon. However, experts worry about the possibility of the virus mutating into a form that can spread easily between humans.

The rapid spread of AI among birds also increases the risk of zoonotic diseases—diseases that can be transmitted from animals to humans. For public health authorities, this means more resources need to be allocated for monitoring, prevention, and treatment, which increases the strain on healthcare systems, especially in developing countries.

#### **Ecosystem and Biodiversity**

Wild birds can carry and spread avian influenza viruses across vast distances. Migratory bird routes serve as conduits for the spread of the disease. For wildlife conservationists, this raises concerns about the longterm effects on bird populations, especially for endangered species. If the virus mutates or becomes more virulent, it could cause widespread die-offs, disrupting ecosystems and threatening biodiversity.

Moreover, the avian influenza outbreaks affect biodiversity at a broader level. Farmers and rural communities dependent on poultry farming often rely on this income for their livelihood. The economic and social upheaval brought about by repeated outbreaks leads to instability in rural areas, affecting food security, local agriculture, and community wellbeing.

#### **The Indian Scenario**

India, with its vast population and expanding poultry industry, faces its own challenges when it comes to avian influenza. While India is not the epicenter of global AI outbreaks, it has had its share of incidents, and the country's proximity to Southeast Asia, where the virus is more common, increases the risk.

#### **Economic Challenges**

India's poultry industry is one of the largest in the world, providing livelihoods to millions. In addition to producing eggs and chicken for domestic consumption, India is a significant exporter of poultry products. The threat of avian influenza outbreaks puts the industry at risk of severe financial losses. Several states have witnessed AI outbreaks, leading to mass culling of poultry. In 2017, the state of Kerala experienced an outbreak of H5N1, causing huge losses to the poultry industry.

The economic toll on farmers is exacerbated by the lack of insurance and financial support. Many poultry farmers, especially in rural areas, operate on thin margins, and the culling of birds leads to immediate financial strain. As global trade bans are imposed on Indian poultry products, the market is further destabilized.

## Public Health Concerns in India

India faces a unique challenge in controlling avian influenza because of its dense population and high human-animal interaction. While human cases of AI are rare, India's vast poultry farms and live bird markets increase the risk of cross-species transmission. The health infrastructure in rural areas is often inadequate, and surveillance for zoonotic diseases is underdeveloped in certain regions.

The government has been taking steps to ensure that AI outbreaks are detected early and controlled swiftly. Authorities have implemented culling measures, bird vaccination programs, and biosecurity protocols to limit the spread of the virus. However, given the country's size and the vast poultry industry, controlling Al remains an ongoing challenge.

#### **Environmental Impact**

India's wetlands and migratory bird routes make it vulnerable to avian influenza transmission from wild birds. Migratory birds often bring the virus into the country, leading to outbreaks in poultry farms. These migratory patterns are hard to control, and as the climate changes, the movement of birds may increase, further spreading the virus.

Environmentalists have raised concerns that large-scale poultry farms in India are contributing to the rapid spread of Al. Poor sanitation and lack of biosecurity measures on some farms can exacerbate the problem. However, the Indian government and international organizations are working together to improve poultry farming standards, making them more resilient to outbreaks.

#### Looking Ahead: Global and Indian Response

As the world confronts the threat of avian influenza, there is an increasing need for a coordinated global response. Stronger surveillance systems, better communication between countries, and prompt responses to outbreaks are crucial for minimizing the impact. Scientists are continuously studying AI to develop more effective vaccines and treatments, though the unpredictable nature of the virus makes it difficult to stay ahead of potential outbreaks.

In India, ongoing efforts to raise awareness about biosecurity practices among poultry farmers and strengthen veterinary surveillance systems are crucial in limiting outbreaks. Additionally, improving rural healthcare infrastructure and making timely intervention strategies available can help contain any human transmission. A key part of this effort is enhancing the coordination between local, state, and central governments to respond swiftly to outbreaks.

#### Conclusion

The impact of avian influenza outbreaks on both a global scale and within India cannot be underestimated. From economic losses to public health threats, the virus presents a multifaceted challenge. While the immediate danger to humans remains low, the potential for future pandemics is ever-present. Through vigilance, improved biosecurity practices, and international cooperation, we can reduce the risks posed by avian influenza. For India, where poultry farming is an essential part of the economy and rural livelihoods, addressing this challenge head-on is key to ensuring both food security and public health.

As the world continues to grapple with the complexities of avian influenza, it's clear that collaboration and preparedness will be the cornerstones of successfully managing this ongoing threat.

Article

# Budget 2025: Key Provisions for the Poultry Sector

The 2025 budget includes several measures aimed at enhancing agricultural productivity, supporting sustainable farming, and improving food security. Given the poultry industry's significance, government interventions focus on financial aid, infrastructure development, and regulatory support.

## Subsidies and Financial Assistance

One of the highlights of the budget is the increased financial assistance for poultry farmers. The government has allocated substantial funds for subsidies on poultry feed, veterinary care, and farm equipment. Interest-free or low-interest loans are also being provided to small and medium-sized poultry enterprises to encourage growth and modernization.

Additionally, grants are available for farmers adopting innovative and sustainable poultry farming practices. These financial incentives aim to reduce production costs and enhance overall industry efficiency.

#### **Tax Relief and Incentives**

To promote investment in the poultry sector, the government has introduced tax benefits, including reduced GST on poultry feed and farm machinery. Smallscale poultry businesses will benefit from exemptions and tax breaks that will improve their profitability and sustainability.

Tax incentives are also being offered to large-scale poultry processors investing in automation, cold storage facilities, and value-added poultry products. This initiative is expected to increase industry competitiveness and boost export potential.

## Infrastructure Development and Modernization

A significant portion of the budget is dedicated to improving rural infrastructure to support poultry farming.



21



The government is investing in road networks, storage facilities, and logistics systems to ensure better access to markets for poultry farmers.

Funds have also been earmarked for the establishment of modern slaughterhouses, hatcheries, and processing plants. These advancements will enhance biosecurity, food safety, and quality standards in the poultry industry, aligning with international trade regulations.

#### Research and Development (R&D) Investments

Recognizing the importance of innovation, the government has increased funding for poultry research institutions. These investments aim to develop disease-resistant poultry breeds, improve feed efficiency, and explore alternative protein sources for poultry nutrition.

Collaboration between government agencies, universities, and private enterprises is being encouraged to drive technological advancements in poultry farming. This includes AI-driven farm management systems and precision feeding techniques that optimize productivity.

#### Regulatory Policies and Their Impact on the Poultry Industry

Alongside financial provisions, the 2025 budget introduces regulatory measures designed to ensure industry sustainability and compliance with global standards.

#### Stricter Biosecurity Regulations

To mitigate the risk of disease outbreaks such as avian influenza, the government is implementing stringent biosecurity measures. Poultry farms must adhere to improved sanitation protocols, vaccination programs, and disease surveillance systems.

Non-compliance with biosecurity standards will result in penalties and potential shutdowns. While these regulations may increase operational costs in the short term, they are essential for long-term industry resilience.

#### Antibiotic Usage Restrictions

In response to growing concerns about antibiotic resistance, the government is imposing stricter controls on the use of antibiotics in poultry production. Farmers are encouraged to adopt alternative disease management strategies, including probiotics and herbal feed additives.

The transition to antibioticfree poultry farming may pose initial challenges for producers, but it aligns with global trends and enhances consumer confidence in domestic poultry products.

#### Environmental Sustainability and Climate Policies

With climate change becoming a pressing issue, the 2025 budget includes initiatives promoting ecofriendly poultry farming. The government is incentivizing the adoption of solar energy, rainwater harvesting, and waste recycling practices on poultry farms.

Additionally, new regulations are being introduced to monitor and reduce greenhouse gas emissions from poultry production. Compliance with environmental standards will be essential for businesses seeking export opportunities in environmentally conscious markets.

# Challenges and Concerns for Poultry Farmers

While the government's policies and budget allocations present several opportunities, there are also challenges that poultry farmers must navigate.

#### **Rising Production Costs**

Despite subsidies, poultry farmers face increasing costs of feed, labor, and compliance with regulatory measures. Ensuring that financial assistance reaches small farmers effectively remains a concern.

#### Market Competition and Pricing Pressures

Large-scale poultry producers benefiting from automation and tax incentives may gain a competitive edge over smallscale farmers. Ensuring fair market access and price stability will be crucial for industry sustainability.

#### Implementation and Bureaucratic Delays

Timely execution of budgetary provisions and policies is essential for their effectiveness. Delays in fund disbursement, infrastructure projects, and regulatory clarity could hinder industry growth.

## Future Outlook for the Poultry Industry

Despite these challenges, the 2025 budget provides a

roadmap for a more resilient and sustainable poultry industry. With government support, technological advancements, and evolving consumer preferences, the poultry sector is poised for transformation.

Policymakers, industry stakeholders, and farmers must collaborate to ensure the effective implementation of policies. By leveraging government initiatives and embracing innovation, the poultry industry can enhance productivity, competitiveness, and sustainability in the years ahead.

#### Conclusion

The government's policies and budgetary provisions for 2025 play a crucial role in shaping the future of the poultry industry. Increased financial aid, infrastructure development, and regulatory support create opportunities for growth, while challenges such as rising production costs and market competition must be addressed.

With the right strategies and stakeholder cooperation, the poultry industry can capitalize on these policy initiatives to ensure a sustainable and prosperous future. As the sector adapts to changing regulations and market dynamics, it remains a vital component of global food security and economic development.



### Enhancing Feed mill Efficiency with Precision Post-Pelleting Liquid Application (PPLA) Systems for Spraying Heat-Sensitive Additives

Er. Vishal Sachdeva, Asst. Technical Manager, Huvepharma SEA

The modern feedmill industry constantly evolves to meet the growing demand for high-quality animal feed. One of the critical aspects of feed production is the addition of liquid additives such as enzymes, vitamins, and other micronutrients. These additives, often heat-sensitive, require precise application methods to ensure their efficacy and stability. This is where PPLA systems come into play.

#### The Challenge of Heat-Sensitive Additives

Heat-sensitive additives, such as enzymes, are integral to improving feed digestibility, optimizing animal performance, and reducing feed costs. However, the high temperatures associated with the pelleting process—ranging from 80°C to 120°C—can denature these sensitive compounds, rendering them ineffective.

Traditional methods of liquid additive application often struggle to achieve uniform distribution, accurate dosing, and protection of heat-sensitive ingredients. This inefficiency not only leads to potential wastage of costly additives but also impacts feed quality and nutritional consistency.

#### The Role of PPLA Systems

PPLA systems offer a breakthrough solution for applying liquid additives in feedmill operations. These systems are designed to deliver precise amounts of liquid additives directly onto feed pellets after the pelleting process, ensuring minimal exposure to high temperatures.

Key features of PPLA systems include:

- **Precision Dosing:** PPLA systems use advanced metering technology to ensure accurate and consistent application of liquid additives, even at low inclusion rates.
- **Uniform Distribution:** By employing high-quality spray nozzles and dynamic mixing mechanisms, PPLA systems guarantee even coverage of the liquid across the feed surface, enhancing feed quality.
- Heat Protection: By applying additives postpelleting, PPLA systems prevent exposure to the high temperatures of the pelleting process, preserving the activity and efficacy of heatsensitive compounds.

• Automation and Integration: Modern PPLA systems can be seamlessly integrated into existing feedmill operations. With automated controls, real-time monitoring, and data logging, these systems ensure operational efficiency and traceability.



**Benefits of PPLA Systems in Feedmill Applications** The adoption of PPLA systems in feedmills offers numerous advantages:

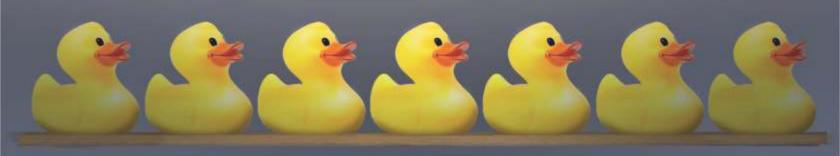
- **Cost Efficiency:** Precise application minimizes wastage of expensive liquid additives, optimizing feed production costs.
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#### Conclusion

As the feedmill industry strives to meet the dual demands of efficiency and quality, the integration of PPLA systems represents a transformative step forward. These systems not only ensure the effective use of heat-sensitive additives like enzymes but also align with the industry's goals of sustainability and cost optimization. By adopting PPLA technology, feedmills can deliver superior feed products that meet the nutritional needs of livestock while achieving operational excellence.

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#### Article



# Chairman's Monthly Round-Up

#### Monthly Round Up January 2025

Dear CLFMA Members and Industry Colleagues,

## Greetings from **CLFMA OF INDIA!**

The livestock sector continues to be a key driver of India's economic growth, and CLFMA remains committed to promoting sustainable progress across dairy, poultry, fisheries, and the broader livestock industry.

# Here's a brief overview of our activities and engagements in January 2025:

#### CLFMA OF INDIA at Indusfood Agritech 2025:

**CLFMA OF INDIA actively** participated in the Indusfood Agritech Show from January 9-11, 2025, at Yashobhoomi IICC, Dwarka, New Delhi. This premier exhibition highlighted four key sectors: Food Processing Machinery & Technology, Packaging Technology and Solutions, Food Ingredients, and Hospitality Equipment & Technology. CLFMA's stall (L02) was represented by Mr. Dinesh Ambavkar and Mr. Jeetu Kumar from Interface Pharmaceuticals Pvt. Ltd., a CLFMA member's

staff. The stall received significant attention, attracting approximately 65 to 70 visitors.

#### Entrepreneurship Development Conclave 2025:

On January 13, 2025, CLFMA OF INDIA participated in the Entrepreneurship Development Conclave organized by the Government of India at G. D. Madgulkar Auditorium, Pimpri Chinchwad, Pune, Maharashtra. This event aimed to recognize stakeholders' contributions and raise awareness of two critical entrepreneurship development schemes: The Animal Husbandry Infrastructure Development Fund (AHIDF) and the National Livestock Mission - Entrepreneurship **Development Programme** (NLM-EDP).

The conclave commenced with a lamp-lighting ceremony led by Union Minister Shri Rajiv Ranjan Singh, along with esteemed dignitaries including Hon'ble Prof. S.P. Singh Baghel, Hon'ble Shri George Kurian, and Hon'ble Smt. Pankaja Munde. Representing CLFMA OF INDIA were Chairman Mr. Divya Kumar Gulati, Past Chairman Mr. B.S. Yadav, Deputy Chairman Mr. Naveen Pasuparthy, and members Mr. Sameer Chotai and Mr. Milind Limaye.

## Collaborative Meeting with BCC & US Grains Council:

CLFMA OF INDIA, in collaboration with the Broiler Coordination Committee (BCC) and the US Grains Council (USGC), hosted a strategic meeting on January 14, 2025, in Coimbatore. The discussions centered on grain supply dynamics, alternative feed ingredients like sorghum, and emerging agricultural technologies.

CLFMA Treasurer Mr. R. Ramkutty welcomed the attendees, while Chairman Mr. Divya Kumar Gulati underscored the need for sustainable solutions to address grain shortages. Dr. Harshakumar Shetty presented insights on India's grain statistics, highlighting the importance of exploring alternatives to corn. BCC Chairman Mr. R. Laxmanan and officials from Venkateshwara Hatcheries Ltd. emphasized the potential of sorghum in poultry feed. The event concluded with

a networking dinner hosted by Shanthi Feeds, reinforcing global collaborations to strengthen India's poultry industry.

On January 24, 2025, CLFMA Chairman Mr. Divya Kumar Gulati sent a formal thank-you note to USGC officials, Mr. Reece Cannady and Mr. R. Laxmanan. The note was acknowledged by Mr. Reece Cannady, Mr. Clint White, and Mr. Ethan Miller.

#### CACP Consultative Meeting on Kharif Crops Price Policy 2025-26:

On January 17, 2025, Dr. S. S. Pattabhirama represented CLFMA OF INDIA at the Commission for Agricultural Costs & Prices (CACP) consultative meeting on the Price Policy for Kharif Crops (Marketing Season 2025-26), held at Unnati Hall, Krishi Bhavan, Delhi.

Dr. Pattabhirama highlighted CLFMA's role and provided insights into India's livestock, poultry, and aquaculture sectors. He emphasized the livestock sector's substantial maize demand (approximately 25 MMT annually) and the overall market requirement of 42-45 MMT, considering the starch and ethanol industries. Given that maize prices remain above MSP even at harvest, he recommended against an MSP increase. He also advocated for governmentsupported grain complexes with dryers to mitigate postharvest losses caused by unseasonal rains.

#### CLFMA's Partnership with PoultryTech Innovation Council:

The PoultryTech Innovation Council (PTIC) extended an invitation to CLFMA OF INDIA, under the leadership of South Zone President Mr. C. Saravanan of Swathi Hatcheries, to serve as an Association Partner for the Poultry Tech Summit & Expo 2025. Scheduled for January 25, 2025, at Le Meridien, Coimbatore, this event aimed to drive progress in the poultry sector by uniting stakeholders across the value chain to share knowledge, foster collaboration, and embrace innovation.

#### **Upcoming CLFMA Seminars:**

CLFMA OF INDIA is actively

planning upcoming seminars, including the Poultry Seminar in Coimbatore on February 21, 2025, and another in Pune on March 5, 2025. Additional seminars focusing on poultry, aqua, and dairy will be announced soon, reinforcing CLFMA's commitment to industry knowledge-sharing and advancement.

## Message for Dairy in India 2025:

White Wing Media has released the 2025 edition of Dairy in India, set for launch in February 2025. At their request, CLFMA Chairman Mr. Divya Kumar Gulati contributed a special message for this edition on January 30, 2025, underscoring CLFMA's dedication to the dairy industry.

**CLFMA** remains committed to advancing progress and innovation throughout the livestock value chain. Your unwavering support drives our efforts toward building a sustainable and thriving future for the industry.

We sincerely appreciate your continued partnership and collaboration.





# Egg and Chicken Market Trends: 2025 Outlook in India

The poultry industry in India has experienced remarkable growth over the years, emerging as one of the fastest-growing segments of the agricultural sector. As we step into 2025, the dynamics of the egg and chicken market are expected to evolve further, influenced by factors such as consumer demand, government policies, technological advancements, and global trends. This article provides a comprehensive outlook on the Indian egg and chicken market, highlighting key trends, challenges, and opportunities that lie ahead.

### Current State of the Indian Poultry Industry

India is the third-largest producer of eggs and the fourth-largest producer of chicken in the world. With a rapidly growing population, increasing protein consumption, and changing dietary patterns, poultry products have become a staple in Indian households. The industry contributes significantly to the economy, providing employment to millions and playing a crucial role in nutritional security.

## The sector is broadly divided into two segments:

- **1.** Layer Industry Focuses on egg production.
- 2. Broiler Industry Focuses on chicken meat production.

In recent years, there has been a surge in per capita consumption of eggs and chicken due to their affordability, nutritional value, and increasing health consciousness among consumers.

#### Key Trends Shaping the Egg and Chicken Market in 2025

#### 1. Rising Demand for Protein-Rich Diets

With growing awareness about health and nutrition, Indian consumers are shifting towards protein-rich diets. Eggs and chicken, being excellent sources of high-quality protein, are gaining popularity across demographics. The government's initiatives to promote protein consumption through mid-day meal programs and nutritional awareness campaigns are further driving demand.

#### 2. Expansion of Processed and Value-Added Poultry Products

The demand for processed and ready-to-cook poultry products is increasing in urban and semiurban areas. Consumers are looking for convenience, hygiene, and high-quality products, leading to the growth of frozen chicken, marinated meats, and egg-based products such as mayonnaise and protein powders. Companies are investing in processing infrastructure to cater to this evolving demand.

#### 3. Price Volatility and Cost of Production

The poultry industry faces frequent fluctuations in feed



prices, mainly due to changes in soybean and maize costs. Since feed accounts for nearly 70% of the production cost, any price hike directly impacts poultry farmers. Government interventions in ensuring stable feed supply and promoting alternative feed sources like insect-based protein could help mitigate these challenges in 2025.

#### 4. Integration of Technology in Poultry Farming

Technology adoption in poultry farming is revolutionizing the sector. Farmers are now using Artificial Intelligence (AI), Internet of Things (IoT), and automation to monitor flock health, optimize feed usage, and enhance productivity. Smart poultry farms equipped with climate control systems, automated feeders, and disease detection tools are becoming more prevalent in India.

#### 5. Government Policies and Budget 2025 Implications

The Indian government has been supporting the poultry sector through various schemes and subsidies. The **Union Budget 2025** is expected to allocate funds for:

- Infrastructure Development: Cold storage and supply chain improvement.
- Credit Facilities: Easy loans and financial assistance for small and medium-scale poultry farmers.
- Disease Control Programs: Strengthening biosecurity measures and vaccination programs to combat avian influenza and other poultry diseases.

- **Export Incentives:** Encouraging poultry exports by easing trade regulations and meeting international standards.
- 6. Rising Concerns Over Bird Flu and Biosecurity Measures

India has witnessed occasional outbreaks of avian influenza, causing significant economic losses. In 2025, strict biosecurity measures, enhanced surveillance, and vaccination programs are expected to be prioritized to prevent disease outbreaks. Farmers are being trained to implement better hygiene and farm management practices.

#### 7. Growth of Organic and Free-Range Poultry Farming

With increasing consumer preference for organic and antibiotic-free poultry products, free-range and organic farming are gaining traction. More farmers are shifting towards cage-free egg production and antibiotic-free chicken rearing to meet market demands. Certification programs for organic poultry farming are also expected to expand.

#### 8. Online and Retail Expansion

E-commerce and modern retail outlets are becoming key distribution channels for poultry products. Companies are leveraging online platforms to sell fresh eggs, chicken, and value-added products directly to consumers. The farm-to-fork model, ensuring traceability and freshness, is gaining popularity among urban consumers.

#### 9. Climate Change and Sustainability Challenges

Extreme weather conditions, rising temperatures, and unpredictable rainfall patterns are affecting poultry farming. In 2025, there will be a greater emphasis on sustainable farming practices, including:

- Renewable energy sources such as solar-powered poultry farms.
- Water conservation techniques.
- Eco-friendly waste management solutions.

#### 10. Export Market and International Trade Opportunities

India's poultry export market is growing steadily, with increasing demand from Middle Eastern and Southeast Asian countries. In 2025, the focus will be on meeting global quality standards, improving processing facilities, and enhancing branding to boost poultry exports.

#### Challenges Facing the Poultry Industry

Despite the positive growth outlook, the poultry industry faces several challenges:

- Fluctuating Feed Prices: Dependence on imports for soybean and maize.
- **Disease Outbreaks:** Threat of avian influenza and other poultry diseases.
- Regulatory Compliance: Meeting stringent food safety and export regulations.
- Environmental Concerns: Waste disposal and carbon footprint management.
- Market Volatility: Unpredictable consumer demand and economic fluctuations.

### Opportunities for Growth and Investment

The future of India's poultry industry looks promising, with ample opportunities for growth and investment:

- 1. Investments in Modern Infrastructure: Development of automated poultry farms and advanced processing units.
- 2. Expansion into Rural Markets: Increasing poultry penetration in tier-2 and tier-3 cities.

- 3. Innovation in Feed Alternatives: Exploring costeffective and sustainable feed options.
- 4. Skill Development and Training: Empowering farmers with knowledge of modern poultry management techniques.
- 5. Public-Private Partnerships: Collaboration between government bodies and private sector players to drive industry growth.

#### Conclusion

As we move through 2025, India's egg and chicken market is set for substantial transformation, driven by changing consumer preferences, technological innovations, and supportive government policies. While challenges such as disease outbreaks, feed price volatility, and regulatory compliance persist, the industry is wellpositioned to overcome these hurdles through strategic investments and sustainable practices. With a strong domestic market and emerging export potential, the Indian poultry sector is on a promising trajectory toward growth and resilience.



Article

# Organic & Free-Range Poultry: Market Growth and Challenges

The demand for organic and free-range poultry has surged in recent years, driven by changing consumer preferences, growing health awareness, and ethical concerns regarding animal welfare. As more people seek healthier and more sustainable food options, the organic poultry industry has seen significant growth. However, this expansion comes with its own set of challenges. Let's explore the growth drivers, market potential, and obstacles facing the organic and free-range poultry industry.

#### The Rising Popularity of Organic and Free-Range Poultry

Organic and free-range poultry products are increasingly favored by consumers who prioritize quality, taste, and ethical farming practices. Unlike conventionally raised poultry, organic and free-range birds are raised without antibiotics or synthetic hormones, have access to outdoor environments, and are fed organic, non-GMO diets. These factors contribute to higher nutritional value and superior taste, making them a preferred choice for many health-conscious consumers.

#### Consumer Awareness and Health Trends

The growing awareness of food quality, sustainability, and overall well-being has fueled the demand for organic poultry. With studies linking antibiotic use in conventional poultry farming to antibiotic resistance in humans, many consumers are opting for poultry products that are free from antibiotics and growth hormones. Additionally, organic poultry is often perceived as being leaner and richer in essential nutrients like Omega-3 fatty acids and vitamins, further boosting its appeal.

#### Ethical and Environmental Considerations

Animal welfare concerns are another driving force behind the popularity of free-range and organic poultry. Consumers are increasingly questioning the conditions under which animals are raised and are choosing products that align with their ethical beliefs. Free-range farming practices ensure that birds have access to outdoor space, reducing stress and improving overall well-being. Furthermore, organic farming methods contribute to environmental sustainability by



reducing chemical inputs and promoting biodiversity.

#### Market Growth and Economic Opportunities

The organic and free-range poultry industry has seen impressive growth in recent years, with market reports indicating steady increases in demand. This trend presents lucrative opportunities for farmers, retailers, and entrepreneurs looking to enter the organic food market.

#### **Expansion of Retail Channels**

With organic food becoming mainstream, major supermarkets, specialty stores, and online platforms have expanded their organic poultry offerings. Consumers now have easier access to these products, increasing market penetration and boosting sales. Additionally, farm-to-table initiatives and direct-to-consumer sales models have become more popular, allowing small-scale organic farmers to thrive without relying on large distribution networks.

#### Premium Pricing and Profitability

Organic and free-range poultry products command higher prices compared to conventionally raised poultry due to the higher costs associated with organic feed, ethical farming practices, and certification processes. While this premium pricing benefits farmers and producers, it also narrows the consumer base to those willing and able to pay extra for ethically and organically raised poultry.

#### Challenges Facing the Organic Poultry Industry

Despite its rapid growth and potential, the organic poultry industry faces several significant challenges that impact production, pricing, and market expansion.

#### **High Production Costs**

Raising organic poultry is considerably more expensive than conventional farming. Organic feed costs significantly more, and maintaining freerange conditions requires more land and resources. Additionally, organic certification is a rigorous and costly process that involves meeting strict regulations and undergoing regular inspections. These factors contribute to higher



retail prices, limiting accessibility for cost-conscious consumers.

#### **Supply Chain Limitations**

The organic poultry supply chain is complex, requiring careful coordination between farmers, feed suppliers, processors, and retailers. Maintaining consistent quality and meeting certification standards at every stage can be challenging. Additionally, organic poultry farming has longer production cycles due to the slower growth rate of birds raised without growth stimulants, making it harder to scale operations quickly.

#### Competition with Conventional Poultry

Despite the growing popularity of organic poultry, conventional poultry remains dominant due to its lower price point and widespread availability. Many consumers, especially in pricesensitive markets, opt for conventionally raised chicken due to affordability. Educating consumers about the benefits of organic poultry and making it more accessible remains a challenge for the industry.

## Regulatory and Certification Hurdles

Organic poultry farmers must comply with strict regulatory requirements, which vary by country and region. The certification process is timeconsuming and costly, often discouraging small-scale farmers from transitioning to organic methods. Additionally, navigating evolving food safety standards and labeling regulations adds another layer of complexity to the business.

#### The Future of Organic and Free-Range Poultry

Despite these challenges, the future of organic and free-range poultry remains promising. Continued consumer demand, government support for sustainable agriculture, and advancements in organic farming techniques are expected to drive further growth in the sector.

## Technological Advancements in Organic Farming

Innovations in organic farming methods, such as improved pasture management, alternative feed sources, and automated free-range systems, can help reduce costs and increase efficiency. Research into plant-based or insect-based protein feed alternatives may also help offset high organic feed costs, making organic poultry more affordable for both farmers and consumers.

#### **Policy Support and Subsidies**

Governments and agricultural organizations in many countries are promoting organic farming through incentives, grants, and subsidies. These initiatives aim to support small-scale farmers, encourage sustainable practices, and increase the availability of organic food. Strengthening policies that support organic certification, supply chain infrastructure, and research in sustainable farming can further enhance industry growth.

#### Expanding Consumer Education

Increasing consumer awareness through marketing, labeling transparency, and educational campaigns can help bridge the gap between cost and perceived value. More brands are investing in storytelling, showcasing the ethical and nutritional benefits of organic poultry through digital marketing, influencer collaborations, and social media outreach.

#### Conclusion

The organic and free-range poultry industry has experienced significant growth fueled by consumer demand for healthier, ethically produced food. While challenges such as high production costs, supply chain limitations, and competition with conventional poultry persist, ongoing innovations and policy support offer promising solutions. As consumers continue to prioritize sustainability, animal welfare, and nutrition, the organic poultry market is poised for continued expansion in the coming years. Farmers and businesses that embrace sustainable practices and adapt to changing consumer preferences will be best positioned to succeed in this evolving industry.



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# Poultry Farm Biosecurity: Lessons from Recent

The poultry industry plays a vital role in feeding the world's population, but it is also vulnerable to numerous risks, particularly when it comes to disease outbreaks. In recent years, the poultry sector has faced a series of devastating viral and bacterial outbreaks, from Avian Influenza to Salmonella, which have led to the loss of millions of birds and severe economic repercussions for farmers. These outbreaks have brought biosecurity—the practice of preventing disease introduction and spread—into sharper focus. As the poultry industry continues to grow and evolve, the importance of biosecurity measures has never been more crucial. This article explores the lessons learned from recent outbreaks and how poultry farmers can strengthen their biosecurity protocols to safeguard their flocks and livelihoods.

#### Understanding Biosecurity in Poultry Farming

Biosecurity refers to a set of management practices that are designed to prevent the introduction and spread of diseases within a poultry farm. These practices include everything from controlling the movement of people and equipment to ensuring proper sanitation and monitoring of flock health. The goal is to minimize the risk of infection and prevent outbreaks that can lead to significant losses in production, market access, and animal health.

For many farmers, biosecurity

# Outbreaks

might seem like an afterthought, especially when operations are running smoothly. However, as recent outbreaks have shown, poor biosecurity can lead to devastating consequences. Whether it's a foreign animal disease like Avian Influenza (bird flu) or a common bacterial infection like Salmonella, the impact on poultry farms can be catastrophic—both financially and emotionally.

#### Recent Outbreaks and Their Impact

Several high-profile outbreaks have highlighted the vulnerabilities of the poultry industry. These outbreaks have not only caused losses of millions of birds but have also led to widespread disruptions in the food supply chain.

#### 1. Avian Influenza (Bird Flu)

Avian Influenza (AI) outbreaks have been among the most significant challenges in recent years. The virus spreads rapidly among birds, and in severe cases, it can cause high mortality rates. In 2021 and 2022, the U.S. and several countries in Europe and Asia experienced severe AI outbreaks. The rapid spread of the disease led to mass culling, with millions of birds being slaughtered to contain the virus. These outbreaks underscored the urgent need for robust biosecurity measures on poultry farms, as AI can spread through contact with

infected animals, contaminated equipment, and even wild birds.

#### 2. Salmonella Outbreaks

Salmonella, a bacterium that can cause severe illness in both humans and poultry, is another threat to the poultry industry. In recent years, there have been multiple cases of Salmonella outbreaks linked to contaminated eggs and poultry products. These outbreaks have not only harmed public health but also led to recalls, legal actions, and financial losses for producers. Effective biosecurity practices, such as proper sanitation, temperature control, and testing, are crucial for preventing the spread of Salmonella in poultry farms.

#### 3. Newcastle Disease

Newcastle Disease, a viral infection that affects poultry, has also made headlines in recent years. Highly contagious, it spreads rapidly and can cause significant production losses. In 2018 and 2019, outbreaks of Newcastle Disease in the U.S.

led to the culling of thousands of birds and disrupted poultry operations. Like other avian diseases, Newcastle Disease emphasizes the need for farmers to be vigilant and proactive in their biosecurity practices.

#### Lessons Learned from Recent Outbreaks

Recent outbreaks of poultry diseases have provided valuable lessons for farmers on the importance of biosecurity. These lessons not only highlight the need for improved disease prevention strategies but also demonstrate how wellmanaged biosecurity systems can reduce the risk of disease outbreaks and protect the health of flocks.

#### 1. Early Detection is Critical

One of the most important lessons from recent outbreaks is the need for early detection. Diseases like Avian Influenza and Newcastle Disease can spread rapidly, often before symptoms are visible in birds. To mitigate this risk, farmers must implement regular monitoring and surveillance practices.

Regular flock health checks, including temperature monitoring and observing bird behavior, can help identify early signs of illness. Additionally, on-farm testing for specific pathogens, such as AI or Salmonella, can provide early warning signs that a disease is present, allowing for a quicker response. Early detection allows farmers to isolate infected birds before the disease spreads to other parts of the farm or neighboring farms, minimizing the impact.

#### **Technological Solutions**

The use of technology is also gaining traction in improving early detection. Al-powered systems, sensors, and monitoring devices can analyze patterns in bird behavior, temperature, and even vocalizations to spot abnormalities. This proactive approach helps farmers identify potential health issues before they escalate into fullblown outbreaks.

#### 2. Strict Control of Visitor Access and Movement

Recent outbreaks have highlighted the importance of controlling access to poultry farms. Disease can be spread through contaminated equipment, vehicles, or even human contact. Limiting visitor access and ensuring that anyone entering the farm takes proper biosecurity precautions is essential.

Farmers should establish clear



protocols for anyone visiting the farm, whether it's farm workers, suppliers, or veterinarians. Visitors should change into farm-specific clothing, wear foot coverings, and disinfect hands and equipment before entering poultry houses. Additionally, farms should set up biosecurity checkpoints at entry points, with proper sanitation stations for footwear, hands, and equipment.

Farm Perimeter Security In addition to controlling internal access, perimeter security is equally important. Establishing a biosecurity zone around the poultry farm helps to prevent contact with wild birds, rodents, and other animals that may carry disease. Netting around poultry houses and fencing off the farm can help reduce the risk of disease transmission from the outside.

## 3. Proper Waste Management and Sanitation

Proper sanitation is one of the cornerstones of effective biosecurity. Poultry farms generate waste in the form of manure, bedding, and dead birds, all of which can harbor disease-causing pathogens. Proper disposal of these materials is critical to preventing the spread of disease.

Farmers should implement proper waste management practices, such as composting or using biosecurity-approved disposal methods. Additionally, thorough cleaning and disinfection of poultry houses, equipment, and transport vehicles are essential to reducing the risk of disease transmission. Farms should regularly clean and disinfect drinking water systems, feeders, and ventilation systems to maintain a diseasefree environment.

Sanitation Protocols Using designated cleaning tools for different areas of the farm (e.g., separate tools for feed bins, water containers, and poultry houses) is a key practice. Moreover, rotating disinfectants and using those that are proven to kill specific pathogens (such as Al or Salmonella) is critical for thorough biosecurity management.

## 4. Vaccination and Health Management

Vaccination plays a crucial role in disease prevention. Vaccinating poultry against common diseases like Newcastle Disease and Avian Influenza can help reduce the likelihood of severe outbreaks. Routine vaccinations should be part of every poultry farm's health management plan.

Farmers should work with veterinarians to design a vaccination schedule tailored to the specific needs of their flocks. While vaccination is not a replacement for biosecurity, it serves as an important additional layer of protection, particularly in regions where the risk of disease is higher.

#### 5. Education and Training

Biosecurity is only as effective as the people implementing it. Recent outbreaks have demonstrated the need for ongoing education and training for farm workers and staff on the importance of biosecurity practices. All employees should be thoroughly trained on the protocols for preventing disease, including proper sanitation, personal protective equipment (PPE) usage, and how to recognize symptoms of common poultry diseases.

Training should be ongoing and updated regularly to reflect new research, technology, and practices. Ensuring that everyone on the farm is committed to biosecurity is essential for maintaining a disease-free operation.

#### Moving Forward: Building a Resilient Biosecurity Framework

The poultry industry will continue to face the threat of disease outbreaks, but by learning from past mistakes and taking proactive steps, farmers can strengthen their biosecurity frameworks. Early detection, controlled access, strict sanitation practices, and ongoing education are all essential components of a strong biosecurity plan.

As the industry continues to grow, there is also a need for greater collaboration between farmers, veterinarians, and government agencies to improve biosecurity standards. With the right tools, knowledge, and commitment, poultry farmers can protect their flocks, safeguard their businesses, and contribute to the overall stability of the global food supply.

In conclusion, biosecurity is not just a set of practices; it's an ongoing commitment to the health and well-being of poultry, the livelihood of farmers, and the sustainability of the industry. The lessons learned from recent outbreaks should serve as a reminder that preparedness, vigilance, and proactive management are key to preventing the next crisis. By embracing these principles, farmers can ensure that their operations remain resilient in the face of disease threats.

# Rising Poultry Feed Costs: Strategies for Cost Control

The poultry industry, an essential component of global food production, has always faced challenges. From disease outbreaks to regulatory changes, farmers are no strangers to adversity. However, in recent years, one issue has come to the forefront more than ever before: the skyrocketing cost of poultry feed. For farmers, this rising expense has become a significant concern, threatening profitability and even the sustainability of their operations. As feed typically represents up to 70% of the total cost of poultry production, understanding the factors driving this increase and exploring practical strategies to control costs is crucial for the future of the industry.

## The Root Causes of Rising Feed Costs

To address the rising cost of poultry feed, it's essential to first understand what's driving the increase. Several key factors contribute to the pressure on feed prices:

1. Supply Chain Disruptions The global supply chain has been under strain for years, exacerbated by the COVID-19 pandemic, geopolitical tensions, and climate-related disruptions. Grain and other essential feed ingredients like maize, soybeans, and wheat are sourced from various parts of the world. When these supply chains are interrupted—whether due to natural disasters, export restrictions, or transportation bottlenecks—feed prices can increase sharply.

- 2. Climate Change Unpredictable weather patterns, droughts, and floods are becoming more frequent and intense due to climate change. These climate extremes impact crop yields and availability, leading to higher prices for key feed ingredients. For example, a drought in the United States or South America can significantly reduce the production of maize, a staple in poultry feed, driving up costs globally.
- 3. Increased Global Demand for Animal Protein As global populations rise and dietary preferences shift towards more animal-based protein, the demand for poultry products continues to grow. This increased demand, coupled with limited feed resources, puts upward pressure on prices.
- 4. Fuel Prices Feed production and transportation rely heavily on energy. Fluctuations in global oil prices can affect the cost of manufacturing and transporting poultry feed. As fuel prices rise, so does the cost of getting feed to farms, further increasing expenses.
- 5. Biofuels and Competing Uses of Grains In many parts of the world, grains that were once primarily used for animal feed are now being diverted toward biofuels and other industries.



The competition for grains between the biofuel industry and livestock sectors creates market instability, further driving up feed prices.

#### Impact of Rising Feed Costs on Poultry Farmers

The increased cost of feed directly impacts poultry farmers, who face slimmer profit margins as a result. For small- and medium-scale farmers, particularly those in developing countries, the higher cost of feed can be a significant threat to their livelihood. For large-scale commercial poultry operations, rising feed costs may require adjustments to pricing, production methods, or even the choice of feed types, all of which affect the bottom line.

Farmers are under pressure to produce more with less, balancing the health and welfare of their flocks with the need to remain profitable. Some may reduce the quality or quantity of feed provided to poultry, but this can lead to negative effects on the health and productivity of the birds, compounding the issue. The ultimate challenge for poultry farmers is finding ways to control feed costs while maintaining a high standard of animal welfare and production efficiency.

#### Strategies for Controlling Poultry Feed Costs

While the rising cost of poultry feed is largely outside the control of farmers, there are several effective strategies that can help mitigate its impact. By adopting a more strategic approach to feed management, farmers can maintain profitability and improve the sustainability of their operations.

#### 1. Optimize Feed Formulation

One of the most effective ways to control feed costs is to optimize feed formulations. By carefully balancing the nutrients in poultry feed and ensuring that each bird receives the exact amount of protein, carbohydrates, vitamins, and minerals needed, farmers can reduce waste and improve feed efficiency. The use of precision feeding systems, supported by AI and automation, can help in this regard by analyzing individual birds' needs and adjusting the feed composition accordingly.

Customizing feed based on the specific requirements of different types of poultry—layers, broilers, or breeders—can further reduce feed waste. For example, adjusting the protein content of the feed based on the birds' age and growth stage helps maximize feed conversion, allowing poultry to grow efficiently while minimizing excess feed costs.

## 2. Incorporate Alternative Feed Ingredients

With the rising prices of traditional feed ingredients like corn and soybeans, many farmers are looking at alternative sources of nutrition. The use of alternative feed ingredients not only helps reduce costs but also contributes to more sustainable farming practices.

- 1. **Insects:** Black soldier fly larvae, mealworms, and other insects are gaining popularity as highprotein alternatives to soybeans and fishmeal. These insects are rich in protein and fats, and they can be farmed sustainably on organic waste, providing a circular, eco-friendly solution to feed production.
- 2. Agri-Byproducts: Various agricultural byproducts, such as distillers' grains, rice bran, and wheat bran, can be used to supplement poultry diets. These byproducts often come at a lower cost than traditional feed ingredients and may offer comparable nutritional value when properly processed.
- 3. Seaweed and Algae: Seaweed and algae have been shown to offer valuable nutrients, such as omega-3 fatty acids, vitamins, and minerals, that can enhance poultry health and productivity. Incorporating these into poultry diets can lower feed costs and provide additional health benefits for the birds.

By diversifying the feed mix and incorporating these alternative ingredients, farmers can cushion themselves from the volatility of traditional feed markets and reduce their overall feed expenditure.

3. Implement Feed Storage and Handling Best Practices

Improper storage and handling

of feed can lead to significant losses, driving up overall feed costs. Ensuring that feed is stored in cool, dry conditions helps prevent spoilage, mold growth, and nutrient degradation. Regular cleaning of feed storage areas and proper sealing of feed containers also helps maintain feed quality and prevents wastage.

Furthermore, improving feed handling practices can reduce spillage during distribution and feeding, ensuring that the maximum amount of feed reaches the birds. The use of automated feeders that distribute feed precisely and consistently can help optimize feed consumption and minimize waste.

#### 4. Improve Feed Conversion Efficiency

A critical factor in controlling feed costs is improving the feed conversion ratio (FCR)—the amount of feed needed for poultry to gain a certain amount of weight. The more efficiently birds convert feed into body mass, the less feed they require. Several strategies can help improve FCR:

- Proper housing and environmental management: Ensuring optimal conditions for poultry, such as maintaining comfortable temperatures, humidity levels, and ventilation, helps reduce stress and encourages better feed conversion.
- Health and biosecurity management: Healthy birds are more likely to have efficient feed conversion. Regular health checks, vaccinations, and proper biosecurity practices reduce the risk of disease, allowing the birds to grow more efficiently.

Additionally, genetic selection of poultry breeds with better feed

conversion rates can help reduce long-term feed costs and increase production efficiency.

#### 5. Bulk Purchasing and Group Buying

Poultry farmers can also reduce feed costs by purchasing feed ingredients or complete feed in bulk. Bulk buying lowers the perunit cost of feed, especially when buying in large quantities directly from suppliers or mills. For smaller-scale farmers, joining cooperatives or group-buying arrangements can also provide access to better pricing on feed.

Working directly with feed suppliers to negotiate pricing based on long-term contracts or forecasting feed needs can provide a more stable cost structure. In some cases, suppliers may offer discounted prices or incentives for larger orders.

#### In conclusion

The rising cost of poultry feed is a significant challenge for farmers, but it is not insurmountable. By optimizing feed formulations, incorporating alternative ingredients, improving feed management practices, and focusing on efficiency, farmers can reduce feed-related costs without sacrificing the health and welfare of their birds. In an increasingly volatile market, proactive and strategic planning will be essential for poultry farmers to maintain profitability and ensure the long-term sustainability of their operations.

As the poultry industry faces growing pressure to balance cost control with production efficiency, embracing these innovative strategies and adapting to changing conditions will be key to navigating the complexities of rising feed costs. By doing so, farmers can continue to provide highquality poultry products to meet global demand while safeguarding their businesses' futures.



# Role of Non-Starch Polysaccharides in Poultry Feed



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#### Introduction

Non-starch polysaccharides (NSPs) play a significant role in poultry nutrition, influencing various aspects of growth, digestion, and overall health. NSPs are complex carbohydrates found in plant-based feed ingredients and constitute a major component of dietary fiber, contributing approximately 10-30% of nutrients in poultry diets. Their effects can vary based on their solubility and physical properties.

#### Non- Starch Polysaccharides

Non-Starch Polysaccharides (NSP), are complex carbohydrates that are present in the cell walls of plants. These substances are distinguished from starch by their structure, which is composed of long chains of sugar molecules. Numerous polysaccharide types, including cellulose, hemicellulose, pectins, and others, are included in NSP compounds.

Since starch is a different kind of carbohydrate made up of glucose units connected by alpha-glycosidic bonds, these NSP substances are collectively referred to as "nonstarch." In contrast to starch, NSPs often require certain enzymes to be digested by monogastric animals like swine and poultry.

#### Types of Non-Starch Polysaccharides

NSPs can be classified into two main categories based on their

#### solubility:

#### 1. Soluble Non-Starch Polysaccharides (sNSP):

- These polysaccharides dissolve in water and form viscous solutions. Common examples include pectins and some hemicelluloses.
- sNSPs can increase the viscosity of intestinal contents, which may hinder nutrient absorption but also provides substrates for beneficial gut microbiota, promoting gut health.

#### 2. Insoluble Non-Starch Polysaccharides (iNSP):

- These do not dissolve in water and include cellulose and lignin. They contribute to the bulk of the diet and play a vital role in gut function.
- iNSPs enhance gut motility, improve passage rates through the digestive system, and support gizzard function, which is essential for grinding feed particles.

#### **Nutritional Benefits**

1. Enhanced Nutrient Digestibility: NSPs assist in breaking down complex carbohydrates within plant cell walls, which releases encapsulated nutrients. This process improves the availability of essential nutrients such as proteins, carbohydrates, and minerals, leading to better nutrient utilization by poultry.

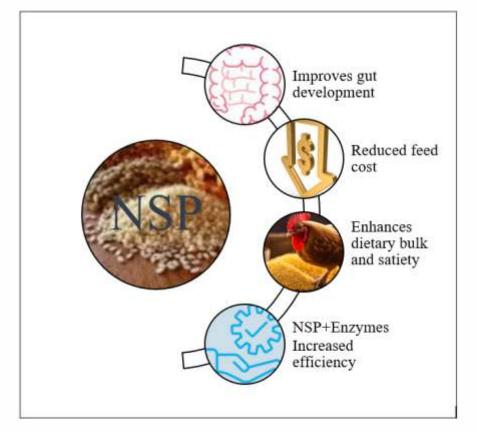
- 2. Improved Feed Efficiency: The incorporation of NSP enzymes into poultry diets enhances the digestibility of feed, allowing birds to extract more energy from their food. This results in increased growth rates and optimal weight gain, making feed usage more efficient.
- 3. Reduction of Anti-Nutritional Factors: NSPs can help mitigate the effects of anti-nutritional factors present in feed ingredients. Efficient digestion through NSP enzymes can reduce the excretion of undigested feed components, benefiting both the birds and the environment by minimizing waste production.
- 4. **Prebiotic Effects:** Soluble NSPs foster beneficial gut bacteria, promoting a healthy gut environment that is crucial for nutrient absorption and overall health.

#### **Economic Importance**

- **Cost Savings:** Enhanced nutrient utilization leads to reduced feed costs for producers. By optimizing nutritional value, farmers can achieve better growth rates and lower feed conversion ratios, ultimately decreasing overall production costs.
- Health Benefits: A healthier gut environment promoted by NSPs contributes to lower veterinary costs associated with digestive disorders. This longterm benefit enhances poultry productivity and profitability for farmers.

## Impact on Gut Health and Litter Quality

1. Gut Functionality: NSPs influence gut morphology and function, which can affect passage rates and retention times within the gizzard. This interaction is crucial for optimal digestion and nutrient absorption.



2. Litter Quality: Managing NSP levels in diets can improve litter quality by reducing moisture content and volume of excreta. Better litter quality is associated with lower incidences of health issues such as respiratory diseases and dermatitis in poultry flocks.

#### Importance of Enzyme Supplementation with NSP

- High levels of NSPs can lead to reduced feed efficiency and growth performance due to their ability to increase digesta viscosity, which limits nutrient contact with digestive enzymes. This is particularly evident when feeding grains with high sNSP content like wheat and barley.
- To mitigate the negative effects of NSPs, the use of NSPdegrading enzymes has been researched extensively. These enzymes can break down soluble NSPs, thereby reducing digesta viscosity and improving nutrient availability. This approach has shown promising results in enhancing growth performance and nutrient utilization in broilers.

#### Conclusion

Incorporating non-starch polysaccharides into poultry diets is essential for enhancing nutrient digestibility, improving feed efficiency, and promoting overall bird health. The economic advantages generated from better growth performance and reduced veterinary costs further underscore the importance of NSPs in poultry nutrition. As the industry moves towards more sustainable practices with reduced reliance on antibiotics, understanding and utilizing NSPs will be vital for successful poultry production.

#### Article



# The Role of Phytase in Poultry Diet

*Phytase enzymes help poultry utilize phosphorus from grains, reducing economic & environmental impact.* 



**Dr. Rahul Mogale** MVsc (Animal Nutrition) Product Manager, Glamac International Pvt. Ltd Phytase enzymes help poultry utilize phosphorus from grains, reducing economic & environmental impact.Over fifty percent of the expense in poultry farming is allocated to feed. Ensuring the productivity of poultry birds and the quality of final products like eggs and meat centers on prioritizing feed quality and nutrient availability. Producers strive to deliver high-quality products efficiently and costeffectively. To economize, producers must optimize animal production sustainably. Poultry birds, known for their rapid growth, require high-quality diets with readily available nutrients. Enzymes serve as a pathway to boost productivity, facilitating increased meat production per bird or, more cost-effective production. Each enzyme possesses distinct traits that influence its inclusion rate in diets, its location within the animal's gut, and its overall

effectiveness. Enzyme are widely used in poultry diets aim to boost nutrient use, support animal wellbeing, enhance product quality, minimize pollution, and broaden ingredient options. An intriguing aspect of enzyme functionality lies in their specific roles within the animal's digestive system.

Due to their ability to enhance feed quality, the market for enzymes is growing rapidly. The Feed Enzymes Market is estimated to be \$1.38 billion USD in 2024 and is expected to grow to \$1.76 billion USD by 2029, with a 5.04% CAGR during the forecast period (2024-2029). Following carbohydrases, phytase is another significant feed enzyme that boosts phosphorus utilization, increases starch, protein, and amino acid availability in animals, and reduces inorganic phosphorus excretion.

Phosphorous (P), Phytate& poultry birds



#### a) Importance of P in poultry:

Phosphorus is vital for poultry growth and development. It helps with metabolism and is part of important compounds like DNA and RNA. Lack of phosphorus can cause poor growth and rickets, and severe deficiency can lead to loss of appetite, weakness, and death. Too much phosphorus can interfere with calcium absorption in the gut.

### b) What is the phosphorusphytate or phytic acid relation?

Poultry diets primarily consist of seed-based ingredients, where most of the phosphorus is present in the poorly digestible form of phytic acid. Due to high costs and pathogen risks in animal proteins, vegetable proteins, which are lower in phosphorus, have become more commonly used. In plant-based feeds, most phosphorus exists as phytates, making up two-thirds of the total phosphorus. Phytic acid, also known as phytate or myo-inositol hexakisphosphate, is the main storage form of phosphorus in plants, accounting for 70-80% in seeds.

Unfortunately, poultry birds poorly digest phytate, which also acts as an anti-nutritional component, creating several major challenges:

- The need to add inorganic phosphorus to the poultry feed. (e.g. DCP & MCP)
- The excretion of a considerable amount of phosphorus in poultry manure.
- The formation of complexes between phytate and other essential nutrients like calcium, zinc, and magnesium, making them unavailable to the birds.

 Increase in endogenous losses of nutrients leads to reduced performance of poultry birds.

This is why poultry diets are supplemented with inorganic phosphorus, such as dicalcium phosphate (DCP) and monocalcium phosphate (MCP), to meet the birds' phosphorus needs. However, adding inorganic phosphorus not only increases feed costs due to nutrient losses (Starches, proteins, fats and minerals binds with phytic acid), but also adds the expense of purchasing the inorganic phosphorus itself.In addition to this, recently, awareness has increased about reducing phosphorus in poultry manure because it can harm the environment. Runoff from manure can enter water and cause issues like eutrophication.

#### c) Challenges in phytate Phosphorus Utilization

If phytate P is used properly, we can solve the problems mentioned earlier. However, there are some challenges that affect its proper utilization by poultry birds. These challenges are:

- Ca and P concentration in feed
- Amount of dietary vitamin D3
- Birds (Age & species)
- Feed ingredients used & feed processing

High dietary calcium reduces phytate phosphorus utilization by forming insoluble complexes and affecting pH, hindering hydrolysis and nutrient absorption. Vitamin D3 deficiency limits phytate phosphorus utilization, while its supplementation enhances phytase activity and nutrient absorption. Older birds exhibit greater phytate hydrolysis, though this declines with age in layers. Incorporating plant-derived ingredients with known phytase activity can optimize phytate utilization in feed formulation by adding exogenous phytase enzyme.

#### Phytase: often considered as the 1st enzyme for the poultry feed formulation



Phytase (myo-inositol hexaphosphate phosphohydrolase) is an enzyme that initiates the removal of phosphorus from phytate or phytic acid. Phytase achieves this by hydrolyzing the phosphorylated phytate compound, progressively breaking it down from fully phosphorylated forms like IP6 to less phosphorylated one IP5 or IP4 to IP3. This hydrolysis is important because highly phosphorylated phytate binds more tightly to proteins and minerals in the intestine, reducing their availability for absorption. Conversely, less phosphorylated forms bind less, allowing better nutrient absorption. Since grains are an integral part of poultry feed, animal nutritionists widely use phytase in feed formulations for several benefits:

- To utilize phytate phosphorous efficiently
- Reducing the negative impact of phytic acid on nutrient digestibility
- Improve illeal digestibility performance of Phosphorous, Calcium, Magnesium, Zinc or Sodium in broiler chicken diets

- Allowing a reduction in the amount of inorganic phosphorus (MCP or DCP) in poultry feed
- Decreasing phosphorus excretion in poultry feces, thus reducing environmental impacts
- Lowering feed costs and improvement in FCR
- Enhance broiler body weight gain and performance
- Improve egg production, enhance egg quality and bone mineralization
- Play role in the improvement of immunity enhancement
- Improve digestibility of protein and amino acid and Enhance Apparent Metabolizable Energy (AME)

#### a) Types and sources

Phytase feed enzymes used in commercial poultry feed are classified into two categories based on the site where the hydrolysis of the phytate molecule begins.

- **3-Phytase:** releases the P moiety at the C3 position of the myo-inositol hexaphosphate ring.
- 6-Phytase: releases the P moiety at the C6 position of the myo-inositol hexaphosphate ring.

We can also classify phytase enzymes on the basis of their origin into bacterial and fungal phytase.

#### i) Fungal phytase

- a. 3-phytase: produced from Aspergillus niger
- b. 6-phytase: produced from Peniophoralycii

#### ii) Bacterial phytase

a. 6-phytase: E. coli, Citrobacter braakii, or Buttiauxella spp.

Bacteria produce cell-associated phytase, while fungi produce

extracellular phytase. Microbial phytase can degrade up to 80% more phytate than endogenous phytase. Bacterial phytases are notable for their resistance to proteolysis, broad substrate specificity, high catalytic efficiency, and extreme heat stability. In contrast, fungal phytases excel in thermostability, activity across a wide pH range, protease resistance in the gut, and high substrate specificity.

## Factor's which affects its effectiveness

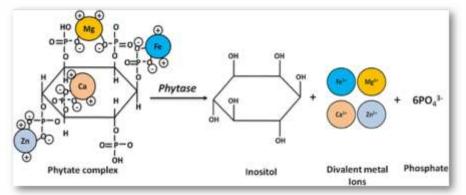
- I) pH: Phytase activity is influenced by pH, with optimal performance in the pH range of 2.5 to 5.5. Studies have revealed that the "phytase from E. coli, or of bacterial origin appear to be more effective than fungal phytase in terms of release of phosphorus per unit of enzyme".
- ii) **Temperature:** Phytase being a protein is prone to denaturation due to excess heat of pelleting. However, the enzyme can be stabilized by spray cooling of pellets and nowadays commercially heat stable phytase is also available.
- iii) Pepsin: As phytase is a protein it is bound to proteolytic hydrolysis by protein digesting enzyme, which is pepsin in poultry gut. Studies have proven that bacterial phytase was proteolysis resistant than fungal phytase.

- iv) Feed phytate level: Phytase activity increases in low-phytic acid diets, but high-phytic acid diets release more phosphorus.
- v) Amount of enzyme used in feed: Need to follow the manufacturer recommendations as given. Matrix valuesprovided by manufacturers will be useful in optimising the dose with feed ingredients added to the formulations.

## Conclusion& future perspectives

Supplementation of phytase helps in reducing dependence on expensive inorganic phosphate supplements in poultry production, and it also enhances the digestibility of amino acids, energy, and micronutrients, which eventually leads to improved nutrient utilization, better growth performance, and more generalized sustainability.

Further research will be oriented toward the additional nutritional benefits, improving stability (thermostable & acid stable) & lowering the dose with highly active phytase variant. Apart from this, there is also another possibility to visualize Investigation on genetically modified grains with reduced phytic acid content is another alternative which has a promising scope in reducing phosphorus lost.



### **Glamac Strengthens Leadership with the Appointment of**

## **Dr. MANISH CHAURASIA** as AGM-Sales & Marketing-Key



### Accounts

Glamac International Pvt Ltd, a leading company in Poultry Nutrition, is pleased to announce the appointment of Dr. Manish Chaurasia as AGM- Sales & Marketing, Key Accounts. In this role, he will be instrumental in managing and growing relationships with high-value clients while developing marketing strategies to drive business growth and contributing to the company's success.

Dr. Manish Chaurasia is a distinguished professional in the field of Veterinary Science and Animal Husbandry, with over 15 years of extensive experience in various capacities, including marketing, product management, farm management, disease diagnosis, and technical support. Born and raised in Madhya Pradesh, India, Dr. Chaurasia has built a remarkable career marked by his expertise and contributions to the animal nutrition and feed industry.

Dr. Chaurasia completed his graduation in Veterinary Science and Animal Husbandry from the prestigious Nanaji Deshmukh University of Veterinary Science in Jabalpur, Madhya Pradesh. His academic foundation laid the groundwork for his deep understanding of animal health, nutrition, and farm management. To further enhance his managerial and leadership skills, he pursued an Advanced Management Development Program from the UCD Michael Smurfit Graduate Business School in Dublin, Ireland, an opportunity by Alltech to continue his learning and professional growth. Throughout his career, Dr. Chaurasia has worked with some of the leading feed manufacturers and feed additives businesses in India, specializing in monogastric animals. His roles have encompassed a wide range of responsibilities, from managing marketing strategies to providing technical support.

One of the notable milestones in Dr. Chaurasia's career was his tenure at Alltech, a global leader in animal nutrition and health, where he served as the Marketing Manager for South Asia. In this role, he played a pivotal part in driving marketing initiatives, fostering business growth, through strategic vision and industry knowledge.

Dr. Manish Chaurasia's career is a reflection of his passion for animal health and nutrition, coupled with his dedication to advancing the industry through innovation and excellence.

With this new addition, Glamac continues its commitment to strengthening its leadership and driving innovation in the industry.





## Two decade wait set to end with the introduction of "VENGEM" LPAI (H9N2) vaccine by Ventri Biologicals Pvt. Ltd. for the first time in India.

Infections of low pathogenic avian influenza virus (H9N2 subtype) cause huge economic losses to the poultry farmers/industry in India due to reduced egg production (up to 50%), respiratory illness and mortality. In India, infections with H9N2 virus in poultry have been reported since 2003 and is widely prevalent and endemic. However, no vaccine was available so far against the circulating H9N2 viruses in India which belong to G1-W lineage. Although commercial vaccines are available abroad. antigenic divergence between the vaccine strain and the currently circulating field strains in India may result in poor antigenic coverage leading to the vaccine failure. As protection provided by imported vaccine against the strains circulating in India is uncertain, there is a pressing need of an indigenously developed vaccine which can provide protection against the circulating H9N2 virus strains in India. This was followed by the Government of India's new vaccine policy in August 2022. Based on the consultations with the experts and requests from the stakeholders, the Department of Animal Husbandry and Dairying agreed to the policy for vaccination against LPAI (H9N2) in India.

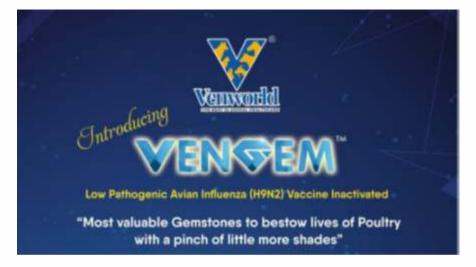
The National Institute of High

Security Animal Diseases (ICAR-NIHSAD) in Bhopal, India developed the first indigenous vaccine for the H9N2 avian influenza virus in chickens. The vaccine is intended to prevent and control the spread of H9N2 in chicken. The vaccine protects against all antigenically divergent strains of H9N2 low pathogenic avian influenza virus in India. The vaccine can help reduce economic losses for poultry farmers and the poultry industry to increase the income of poultry farmers.

According to the policy Technology transfer of "Inactivated low pathogenic avian influenza (H9N2) vaccine for chickens" developed by ICAR-NIHSAD, Bhopal happened to M/s Venkateshwara Hatcheries Pvt. Ltd., Pune, facilitated by M/s. Agrinnovate India Ltd. (AgIn) at NASC, New Delhi. As part of technology transfer, hands on Training on "Low Pathogenic Avian influenza (H9N2) Vaccine Inactivated" for Ventri's Production team at NIHSAD, Bhopal, India.

Ventri Biologicals built a first-of-itskind Biosafety level-3 (BSL-3) vaccine production facility for Poultry industry in India, dedicated for LPAI vaccine production with Process Automation with semi-auto chick embryo inoculator, automated allantoic fluid harvest machines, closed containers inactivation and product formulation followed by auto product filling and labelling stations.

Ventri Biologicals branded the product as "VENGEM". Also, Ventri Biologicals is coming over with series of products including





## the concentrated form and the combination with other viral vaccines.

#### Telangana: Engaging Poultry Farmers and Experts

The first launch events took place on the 6th, 7th, and 8th of January at Hyderabad, Siddipet, and Karimnagar respectively. Mr. K.G. Anand, General Manager inaugurated the seminars with insightful opening remarks, emphasizing the vaccine's critical role in protecting poultry health. Dr. Prakash Reddy (DGM) delivered a comprehensive approach for disease control in poultry with special emphasis on how Vengem strengthens flock immunity and minimizes economic losses caused by LPAI. Additionally, Dr. N. Baburaj (DGM) provided updates on other vaccines in Ventri's portfolio. The

events concluded with gratitude from Mr. Suneel Sharma (AGM), who acknowledged the contributions of the attendees and the Venworld team, which played a vital role in ensuring the success of these events.

#### Maharashtra: Expanding Awareness in Key Poultry Hubs:

On the 15th, 16th, 22nd, and 28th of January 2025, the vaccine launch continued in Nashik, Pune, Sangli, and Amravati respectively. These events highlighted the importance of Vengem for improving poultry health and productivity in Maharashtra. Mr. Deepak Khosla, General Manager opened the sessions with remarks on the vaccine's transformative potential. Dr. Sanjay Gavkare, General Manager explained the approach towards the implementation of H9N2 vaccine policy in India, with the Ventri Biologicals infrastructure development and standardisation of Vengem vaccine boosting flock immunity mitigating the economic losses. This was followed by open session with Dr. M.M. Chawak and Dr. Prakash Reddy to address the queries over the strategies of disease control in poultry. In Amravati, the presentation was led by Dr. Namdeo Bulbule, who provided valuable insights. Dr. H G Murade, concluded the events with warm words of appreciation for the attendees and organizers.

#### Bihar and Uttar Pradesh: Reaching New Frontiers:

Vengem launch meetings in Uttar Pradesh took place on the 22nd, 23rd, and 24th of January 2025 at Gorakhpur, Kanpur, and Lucknow respectively, covering the key









poultry belts of Uttar Pradesh. The events began with inspiring remarks from Mr. H.S. Padda, followed by an in-depth presentation from Dr. Prakash Reddy on the efficacy of Vengem in preventing economic losses due to LPAI, along with a comprehensive



approach for disease control in poultry. In Patna the meeting took place on 8th Jan 2025, and the presentation was delivered by Dr. Shashikant Shiwarkar and Dr. Jaypal Kumar Singh. The Venworld team once again proved instrumental in executing these successful



seminars. Mr. Shashibushan and Mr. Chitaranjan Sahoo, concluded the events at Uttar Pradesh and Patna respectively with warm words of appreciation for the attendees and organizers.



## Dovoy Animal Health organized Technical Seminar in Bangkok.

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Dovoy proudly announces the hosting of a technical seminar on Protease Enzyme along with the visit of the prestigious Kasetsart University on 14/1/2025. The event was hosted in Hotel Four points by Sheraton @Bangkok.The participant were our esteemed clients from Bangladesh and Thailand.



Poultry Planner | Vol. 27 | No. 02 | February - 2025

**Press Release** 

#### **Press Release**



0.P. SINGH Managing Director



DR. PRAGATI SALUTGI Technical Executive





## LEVELLING UP-VALUE CHAIN DRIVING INCLUSIVE GROWTH IN POULTRY INDUSTRY

The poultry industry is one of the fastest-growing sectors in global agriculture, providing a critical source of protein through meat and eggs. Beyond its contribution to food security, the poultry value chain serves as a significant driver of economic development, offering opportunities for inclusive growth across rural and urban communities. By leveraging its multi-faceted value chain, the industry can address social, economic, and environmental challenges while fostering equitable development.

#### **Understanding the Poultry Value Chain**

The concepts of supply chain and value chain are interrelated, as they both focus on the processes that transform raw materials into finished products and services. However, their perspectives differ, and understanding the correlation between the two can enhance business efficiency and value creation

The supply chain and value chain are interconnected frameworks that complement each other. While the supply chain ensures the smooth flow of goods and services, the value chain ensures each step contributes to customer value and competitive advantage. Businesses that harmonize these concepts can achieve sustainable growth, **>>** 

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# 

**Raw Materials** 

Suppliers Manufacturing



Customer



operational efficiency, and enhanced customer satisfaction. The poultry industry has historically worked towards building a robust supply chain and in part succeeded in doing so. Now, what remains to be explored and captured are strategies and implementation to establish a robust value chain for the poultry industry to thrive.

The relationship or link between/among key variables that reflects reality includes only the key variables that are influential and have an impact on the outcome.

Meanwhile, simulation model starts from the Broiler Chicks Lookup variable where policy maker/farmers decide how many breeders can be reared in their whole process as a flock. All square boxes denotes level variable which plays an important role in the poultry supply chain.



## BY ALIGNING THE SUPPLY CHAIN AND VALUE CHAIN:

- 1. Businesses can deliver high-quality products efficiently and cost-effectively.
- 2. They can address consumer demands while optimizing resource use and profitability.
- 3. It fosters an integrated approach where operational processes (supply chain) and customer-focused strategies (value chain) work in tandem.

The methodology includes two models:

(i) a two-stage stochastic model that supports lot-sizing and inventory management decisions while considering scenarios of chicken growth uncertainty, and (ii) a mixedinteger linear programming model that supports lot allocation. The results of implementing the methodology in a poultry company farm improved costs by 8.6% while

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## THE ROLE OF THE POULTRY VALUE CHAIN IN INCLUSIVE GROWTH

#### 1. Job Creation and Livelihoods

The poultry industry is labor-intensive, creating employment at every stage of the value chain. For instance:

- Small-scale farmers can participate in rearing birds or producing feed ingredients.
- Women and youth often find opportunities in backyard poultry farming, egg collection, and retail.
- Skilled jobs arise in areas such as veterinary services, feed production, and processing.

#### 2. Empowerment of Marginalized Groups

The low entry barriers in poultry farming enable participation by marginalized groups, particularly in rural areas. Programs aimed at supporting women and smallholder farmers with microfinance, training, and access to markets have been shown to uplift communities economically and socially



#### 3. Food Security and Nutrition

Poultry products provide an affordable source of highquality protein. Strengthening the value chain ensures consistent supply, enhances affordability, and contributes to the nutritional well-being of vulnerable populations. Poultry is rich in high-quality protein, vitamins (like B12), and minerals (like iron and zinc), which are critical for muscle growth, immune function, and overall health. Eggs are an excellent source of protein (about 6 grams per egg), along with essential nutrients such as vitamins A, D, B12, and folic acid, which support cognitive development, immune function, and general well-being. Poultry meat and eggs are particularly important in combating proteinenergy malnutrition (PE M), especially in vulnerable groups like children and pregnant women..

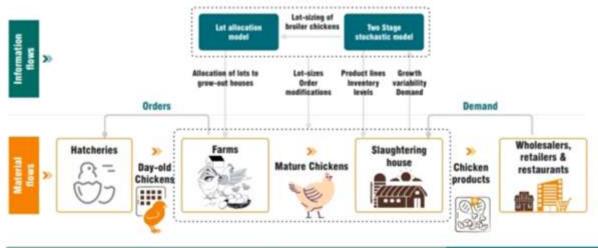
#### 4. Market Integration and Rural Development

By linking rural producers with urban markets and export opportunities, the poultry value chain bridges the urbanrural divide. Value chain interventions, such as cooperatives and farmer organizations, facilitate collective bargaining, reduce transaction costs, and ensure better prices for smallholders.

#### 5. Economic Growth and Export Potential

Poultry is a significant contributor to agricultural GDP in many countries. Investments in advanced processing facilities and compliance with international standards can enhance export potential, bringing foreign exchange earnings and economic stability.





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To maximize the poultry value chain's contribution to inclusive growth, stakeholders must address these challenges through coordinated efforts:

- **1. Capacity Building:** Training programs on modern Farming techniques, biosecurity, and financial literacy can empower farmers and improve productivity.
- 2. Access to Finance: Tailored credit schemes and Microfinance can help small-scale producers invest in better inputs and infrastructure.
- Policy Support: Governments should provide supportive policies, including subsidies for feed and vaccines, and promote fair trade practices.
- Public-Private Partnerships (PPP): Collaborations Between governments, private companies, and nongovernmental organizations can facilitate investment in critical infrastructure and technology.
- Market Linkages: Digital platforms and farmer Cooperatives can improve market access and reduce dependency on intermediaries.
- 6. Social Mapping: Social mapping of meat consumption in India reveals significant variation across rural, semi-urban, and urban populations due to cultural, economic, and geographic factors. The consumption of meat is higher in urban areas but is growing in semi-urban and rural regions due to economic growth, improved disposable income and changing dietary preferences.

The supply chain and value chain are interconnected frameworks that complement each other. While the supply chain ensures the smooth flow of goods and services, the value chain ensures each step contributes to customer value and competitive advantage. Businesses that harmonize these concepts can achieve sustainable growth, operational efficiency, and enhanced customer satisfaction.

7. Changing market dynamics: Various studies published by agencies like- KPMG's Report on Indian Poultry Industry, Behavioral Shifts in Food Choices (International Journal of Consumer Studies, 2019), E uromonitor collectively demonstrate that the changing food habits in India-marked by a preference for packaged chicken and eggs-are influenced by a combination of urbanization, rising incomes, health consciousness, convenience, and concerns over food safety. The shift reflects broader social, economic, and cultural transformations, as consumers in India increasingly seek standardized, branded, and hygienic products that align with modern lifestyles. It is to be noted, that these changes need to be factored in while developing value chain that suits the current notion and trends of the market.

In sum, developing an inclusive and resilient poultry value chain is not only an economic necessity but also a social imperative. It aligns with the goals of nutritional security, economic empowerment, and sustainability, all while responding to the broader trends in food consumption

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#### **Press Release**

## Lumis Enzymes at POULTRY INDIA, HYDERABAD

#### Lumis Enzymes recently exhibited at POULTRY INDIA, HYDERABAD.

Poultry India is the largest trade event in this sub-continent for animal production and a platform for reputed global companies to showcase their products and services. Lumis team had the opportunity to present their unique enzyme portfolio to their visitors who were extremely satisfied with the technical features and outstanding benefits obtained by using Lumis enzymes. Lumis is glad





that they could offer their visitors, sustainable enzyme solutions to the various challenges faced in the feed industry. Lumis and their distributor team experienced very good response to their specially designed enzyme products. Further, the exhibition also gave a platform to meet with their existing customers and also generating extremely promising customer leads for this sub-continent.



## "Nuance Biotechnology's Strategic Expansion: A Game-Changer for the Indian Feed Industry"

Nuance Biotechnology, a rapidly emerging player in the feed additives industry, has made significant strides in 2024 by acquiring two prominent French companies—Global Nutrition International and NutriConcept. This strategic move has bolstered their global footprint, expanded R&D capabilities and facilitated their entry into key markets, including India. Poultry Creations, along with other poultry media, had the privilege of speaking with Dr. Nemanja Todorovic, Chief Business Officer and Mr. Joginder Singh Uppal, Business Director, South Asia, during the 35th AGM of the Poultry Federation of India in Gurugram to discuss their vision, innovations and plans for the Indian market



Entering the Indian Market and Expansion Strategies:

When did Nuance Biotech enter the Indian market and what are your strategies for expansion?

**Dr. Nemanja Todorovic:** India is not just a country; it is a continent in itself with immense potential in biotechnology and livestock. Recognizing this, we have appointed knowledgeable professionals like Mr. Uppal to lead our initiatives. Our key strategies include:

- 1. Forging strategic partnerships with key industry players.
- 2. Expanding distribution networks for broader market penetration.
- Collaborating with research institutions to localize our products.
- 4. Educating farmers on the

benefits of postbiotics and other innovations tailored to Indian conditions."

Joginder Singh Uppal: "We launched our South Asian operations in June 2024 with a strong focus on poultry and dairy. Our flagship products, Nu.biom Aves for poultry and Nu.biom Bos for dairy, enhance resilience, performance and farm profitability. Our goal is to empower farmers through innovative solutions backed by scientific research and technical expertise."

#### **Understanding Postbiotics**

**Question:** Can you explain the difference between postbiotics and other types of biotics? Dr. Nemanja Todorovic: "Biotics are broadly categorized into prebiotics, probiotics, and postbiotics:

- Prebiotics serve as a nutrient source for beneficial gut bacteria.
- Probiotics are live microorganisms that improve gut health.
- Postbiotics are metabolic byproducts of probiotics, offering stable and targeted benefits without the viability concerns of probiotics.

Our postbiotics enhance gut microbiota balance, optimize

nutrient utilization and contribute to immune modulation. Imagine prebiotics as soil, probiotics as rice growing in the field and postbiotics as rice noodles ready for consumption."

Tailoring Solutions for the Indian Market

#### Question: How does Nuance Biotech cater to the unique needs of the Indian market?

**Joginder Singh Uppal:** "We offer tailored solutions to address challenges in poultry and dairy farming, such as:

**Postbiotics:** A novel concept with proven benefits for immunity, egg quality and overall productivity.

**Global Biotics:** Products like mycotoxin binders (e.g., Global Fix) and acidifiers that address vital industry concerns.

Our goal is to support farmers with



innovative products backed by research, while also educating them about sustainable and profitable farming practices."

#### Market Strategy and Customer Engagement

**Question:** Who is your primary target in the market—feed mills, breeders, GP operators, commercial broiler farmers or integrators?

Joginder Singh Uppal: "Our primary focus is on feed mills since our products are predominantly feed additives. About 60-70% of the industry relies on feed, making this our initial target. Our secondary focus is integrators and large-scale farmers, including layer farmers who produce their own feed. Products like NutriGut and Globacid DW are designed for these segments."

#### Unique Selling Proposition and Market Entry

**Question:** With several toxin binders and acidifiers in the market, what makes your products stand out?

**Dr. Nemanja Todorovic:** "Our precision production technology sets us apart. From raw material selection and fermentation to production and quality control, every step is meticulously executed. Our R&D-driven approach ensures high efficacy. Global Nutrition, part of our portfolio, has been a trusted name since 2002, exporting to over 40 countries. This global presence underscores the reliability and effectiveness of our products."

**Question:** Have your products been introduced to the Indian market yet?

**Dr. Nemanja Todorovic:** "We commenced operations in mid-2024, focusing on key partnerships and collaborations. Our first consignment is scheduled to arrive next month, allowing us to engage

with clients and initiate trials. Discussions with several companies are already underway."

#### Future Innovations and Long-Term Vision

**Question:** Can you share upcoming innovations or product launches for the Indian poultry sector?

Joginder Singh Uppal: "Our focus extends beyond product launches—we provide integrated solutions. Enhancing animal resilience is at the core of our philosophy. By leveraging our expertise in microbial metabolites, we develop solutions tailored to specific market needs. While poultry and dairy remain our primary sectors, we are continuously evolving to address industry challenges."

**Question:** What are your long-term plans for the Indian market?

**Dr. Nemanja Todorovic:** "Our strategy is structured around three key phases:

 Establishing Partnerships – We have made significant progress in forging valuable collaborations.

- Regional Expansion In addition to India, we are targeting Pakistan, Bangladesh, Nepal and Sri Lanka.
- Direct Sales and Marketing While working with distributors for outreach, we also plan to engage directly with key accounts representing 50-60% of the poultry industry."

## Sustainability and Industry Challenges

**Question:** What steps is Nuance Biotech taking to ensure product sustainability?

#### Dr. Nemanja Todorovic:

"Sustainability is at the core of our innovation strategy. We focus on enhancing nutrient utilization, reducing waste and minimizing environmental impact. For example, our solutions target ammonia control in poultry and aquaculture. Additionally, our postbiotic solutions have shown promise in reducing methane emissions in dairy cattle, and we plan to conduct further trials in India with leading research institutions."

Question: Unlike poultry, the

Indian dairy sector consists largely of unorganized small farmers. How does Nuance Biotechnology plan to support them?

**Dr. Nemanja Todorovic:** "About 80% of India's dairy farmers operate at a small scale. We aim to reach them through a threepronged strategy:

- Strengthening our distribution network to enhance accessibility.
- 2. Focusing on large dairy operations that drive significant market influence.
- 3. Leveraging veterinary shops as a direct channel for small-scale farmers, a model that has succeeded in similar markets."

In conclusion, Nuance Biotech is positioning itself as a pioneering force in the feed additives sector, committed to innovation, sustainability and farmer education. As they expand their presence in India and beyond, their solutions promise to enhance efficiency, profitability and resilience in the livestock industry.



## **PVS Group has Received USFDA Approval**

P V S LAND MARK

We are thrilled to announce that PVS Group has received **USFDA approval** for our feed supplement plant! This milestone further reinforces our dedication to quality and innovation in animal and aquaculture healthcare products.

PVS Group is proud to be a leading manufacturer and exporter in this vital field. Our journey began in **1993** when Dr. PVS took on the distributorship of INDOVAX. The following year, he launched ANULABS, India's first private laboratory for disease diagnostics and feed analysis in aquaculture and poultry. Recognizing the increasing need for effective aqua healthcare solutions, we established our first manufacturing unit in 1997, paving the way for PVS to emerge as a trusted player in animal and aqua health.

Today, we leverage our extensive experience and technical expertise to deliver high-quality and innovative products that meet industry challenges. As a **family-owned business**, we are committed to product quality, exceptional customer service, and transparency. These values are reflected in our offshoot, **International Health Care**, which operates on the motto "**Try and Trust**," always striving to meet customer expectations.

**Global Reach:** With a strong presence in **over 60 countries**, including Vietnam, Bangladesh, Nepal, Myanmar, Sri Lanka, Saudi Arabia, Egypt, Lebanon, Philippines, South Korea etc. PVS Group is dedicated to enhancing animal and aquaculture health on a global scale.

**Commitment to Quality:** At PVS, quality is our top priority. We ensure rigorous testing at every stage—procurement, production, packaging, and distribution. Our inhouse Quality Control department is equipped with modern testing facilities to guarantee that we meet and exceed customer expectations.

## Our Quality Management System (QMS) encompasses:

- Comprehensive evaluation of all raw materials and finished products.
- Thorough review of production and lab records before product release.
- Prompt investigation and resolution of critical issues.
- Regular internal audits and inspections.

• Meticulous maintenance and calibration of critical equipment.

PV B CROUP

**Tailored Solutions for Animal Health:** With over **32 years** of experience, PVS is a leader in producing diverse formulations for animal health, including powders, liquids, and tablets. We are passionate about providing effective healthcare solutions that enhance the well-being of animals, supporting the veterinary industry through research and quality products.

#### Why Partner with PVS?

When you choose to partner with PVS, you benefit from:

- High-quality products that balance cost and effectiveness.
- Expert support in bringing new formulations to life.
- Specialized manufacturing tailored to your product segment.
- Flexibility to order only what you need, minimizing investment risks.
- Collaborative opportunities for testing and launching new products in your market.

If you have an innovative idea for an animal healthcare or aquaculture

product, **connect with PVS!** Our stateof-the-art manufacturing facility and experienced team are here to help turn your vision into reality.

**Certified Quality Practices:** PVS proudly holds **USFDA**, **cGMP**, **ISO**, and **DSIR certifications**, ensuring that we consistently meet strict quality standards. Our clean manufacturing processes and attention to detail help prevent contamination and maintain the integrity of our products. With significant investment in research and development, our dedicated team is committed to finding innovative solutions to modern animal and aquaculture health challenges. Our advanced laboratories and equipment provide a robust platform for creating new animal health pharmaceuticals while improving existing products.

Our **Probiotic Division** is particularly noteworthy, featuring **44 specialized probiotic strains** designed specifically for animal healthcare. These strains are integral to our biotechnological products and are made available to a diverse range of clients.

Join Us! At PVS Group, we prioritize quality and compassionate care for animals. Join us in our mission to enhance animal health and well-being through innovative solutions and unwavering dedication. **Contact us today** to learn more about how we can support your needs!



### Al and Worker Expertise: A New Frontier in Poultry Welfare Monitoring

Harnessing the combined power of artificial intelligence (AI) and the practical knowledge of poultry farm workers is at the heart of a pioneering initiative launched by Harper Adams University in the UK. This innovative project seeks to enhance poultry welfare by leveraging cutting-edge AI technology alongside real-world experience from farm staff to create a more responsive and effective monitoring system.

The university's research team is collaborating with data technology firm Optifarm to refine welfare assessment techniques in commercial poultry farms. By integrating Al-driven insights with human expertise, the project aims to bridge the gap between advanced technology and hands-on farm management. The initiative will not only focus on remote monitoring and on-farm welfare assessments but also explore how best to present data in ways that empower workers to make informed, welfare-conscious decisions.

Additionally, researchers will conduct social science studies to understand the challenges farm staff face when implementing Algenerated recommendations. Language models will play a crucial role in translating complex data into clear, actionable steps that farmers can easily interpret and apply.

#### Enhancing Poultry Welfare and Farm Efficiency

David Spellar, CEO of Optifarm, emphasized that the company's mission revolves around merging AI capabilities with practical farming insights to optimize both animal welfare and operational efficiencies.

"This collaboration with Harper Adams University is an exciting step forward. It allows us to validate our AI engine and algorithms further while integrating social science research into AI-driven communication. We aim to ensure that AI-generated insights are conveyed in a way that resonates with farmers, enabling seamless implementation of welfare recommendations and improved outcomes for both poultry and farm businesses," Spellar stated.

By incorporating Al-driven analytics into real-world farming conditions, the project aspires to enhance onfarm decision-making, allowing for timely interventions that prevent welfare issues before they escalate.

#### Challenges to AI Adoption in Poultry Farming

While AI has demonstrated significant potential in monitoring



poultry welfare, its adoption on commercial farms has faced multiple obstacles. A recent study from Purdue University in the US, published in the journal Animal Frontiers (January 2024), outlined key barriers that hinder the implementation of AI in poultry farming, including:

- Difficulty in translating research findings into practical applications
- Technological limitations and integration issues
- Variability in farm environments and management styles
- Consumer perceptions and concerns regarding AI in agriculture
- Hesitancy among farmers to rely on AI-driven decision-making
- Financial costs associated with Al adoption and infrastructure upgrades

The study concluded that successful AI implementation in poultry farming requires active collaboration between producers, researchers, policymakers, and poultry industry stakeholders. Without effective knowledge transfer from research institutions to farm operations, AI technology risks remaining underutilized.

## Bridging the Gap Between AI and Farmers' Decision-Making

Dr. Laura Palczynski, project lead at Harper Adams University, underscored the importance of engaging directly with farmers to identify their concerns and tailor Al-generated recommendations accordingly.

"My previous research highlights that it's not just about what information is provided but how it is communicated. This is particularly relevant when transitioning from traditional advisory roles to AI-driven recommendations. Understanding how farmers interpret and trust AI insights is crucial to ensuring adoption," she explained.

One of the project's key goals is to refine the way AI-driven data is communicated to farm workers, making it more intuitive and actionable. Researchers will investigate how AI language models can be adapted to provide advice in a manner that aligns with farmers' experience, preferences, and operational realities.

#### Using Data to Improve Poultry Well-Being

Dr. Holly Vickery, a lecturer specializing in animal behavior and welfare, will be working with Optifarm's existing poultry farm data to analyze patterns and identify key indicators of bird welfare.

"By linking welfare conditions to specific data metrics, we can create an early warning system that allows farmers to detect potential issues before they become serious problems. This proactive approach will significantly improve poultry well-being while also enhancing farm productivity," Dr. Vickery stated.

The project seeks to develop a validated AI-powered monitoring system capable of detecting early signs of stress, disease, or environmental issues in poultry houses. This would enable farmers to implement corrective measures swiftly, ensuring healthier flocks and reducing economic losses associated with poor welfare conditions.

#### Future Prospects: Al as a Game-Changer for Poultry Farming

The integration of AI in poultry welfare monitoring represents a transformative step in modern farming. By merging data-driven insights with the hands-on experience of farm workers, the Harper Adams University-Optifarm collaboration aims to create a practical, farmer-friendly solution that can be widely adopted across the industry.

As AI technology continues to evolve, its potential to revolutionize poultry farming becomes increasingly evident. However, for AI to become a staple in commercial poultry operations, researchers and technology



providers must focus on building trust, improving accessibility, and addressing the financial constraints that often deter adoption.

This initiative marks a significant step forward in ensuring that Aldriven innovations do not remain confined to research labs but instead become valuable, everyday tools that empower farmers, improve poultry welfare, and drive the industry toward a more sustainable and efficient future.

### Avian Flu Spreads Across Nine U.S. States, Impacting Poultry Farms and Egg Supply

The highly pathogenic H5N1 avian influenza continues to spread across the United States, with new outbreaks confirmed in poultry flocks across nine states over the past two days. Among the hardesthit locations is a massive layer farm in Dauphin County, Pennsylvania, where nearly 2 million birds are affected. The outbreak is expected to further strain the country's egg supply, which has already been impacted by previous avian flu cases.



In addition to the large Pennsylvania outbreak, a commercial broiler farm in Cumberland County with 30,000 birds has also been affected. Other states are also witnessing a surge in cases, with several commercial poultry farms reporting infections.

#### Ohio and Other States Report Significant Losses

Ohio has emerged as a recent hot spot for avian flu cases, with nine more commercial farms confirming infections:

- Six turkey farms
- Two layer farms
- One layer pullet farm

Beyond Pennsylvania and Ohio, other states experiencing outbreaks at commercial farms include:

• California – turkey farms



• **Maryland** – broiler farms

Meanwhile, New York has reported avian flu detections at two live bird markets located in Queens County and the Bronx, raising concerns about the virus's spread through urban poultry trade.

#### **Backyard Flocks Also Affected**

The virus is not only affecting largescale commercial farms but also backyard poultry flocks. Over the past two days, five states have confirmed avian flu cases in smaller, non-commercial operations:

- Michigan
- Arizona
- Colorado
- Pennsylvania
- Kansas

#### Record-Breaking Bird Losses Across the U.S.

Since the current outbreak began in early 2022, the spread of avian influenza has led to unprecedented poultry losses across the country. More than 156 million birds have been culled to control the spread, affecting all 50 states and Puerto Rico.

#### Impact on Egg Supply and Poultry Industry

The outbreak, especially among layer farms, is expected to worsen egg shortages, leading to rising egg prices across the U.S. Poultry farmers and industry stakeholders are working closely with the USDA Animal and Plant Health Inspection Service (APHIS) to implement containment measures, including strict biosecurity protocols, quarantine zones, and mass culling of infected birds.

The USDA continues to monitor the situation closely, and further restrictions may be put in place to prevent the virus from spreading further into commercial poultry operations and backyard flocks. Authorities urge poultry farmers, both large-scale and small, to enhance biosecurity practices and report any unusual bird deaths immediately.

With the outbreak showing no signs of slowing, experts warn that continued vigilance, preventive measures, and scientific advancements in disease control will be critical in protecting the poultry industry and stabilizing the food supply chain.

### Egg Supply to Schools Halted as Bird Flu Scare Spreads in Andhra Pradesh

Poultry Farms in Affected Areas to Remain Closed for Three



#### Months

The outbreak of avian influenza (H5N1) in Andhra Pradesh has led to stringent containment measures across affected districts, with authorities halting the supply of eggs to schools and Anganwadi centres. The virus has been confirmed at a poultry farm in Velpur village of Tanuku Mandal, West Godavari district, following the death of several chickens on Tuesday. Another outbreak has been detected in Kanuru village, East Godavari district, raising concerns over the rapid spread of the disease.

#### Containment Measures and Restrictions in West Godavari

West Godavari District Collector C. Nagarani stated that poultry samples were tested at the National Institute of High-Security Animal Diseases (NIHSAD) in Bhopal, where



the presence of H5N1 was confirmed. In response, an emergency meeting was held with senior officials to strategize containment efforts.

A red zone has been declared within a one-kilometer radius of the affected farm in Velpur, while a surveillance zone covering 17 nearby villages, including Attili, Iragavaram, and Komaravaram, has been established.

Key restrictions imposed in the affected areas include:

- **Closure of poultry farms** within the red zone for three months.
- Shutting down of chicken and egg shops within the containment area.
- A complete ban on poultry product transportation within the surveillance zone.
- Check posts at major transit points, including Velpur railway gate, Attili, and Kothapadu, to prevent unauthorized movement of poultry products.

To oversee the situation, **20 Rapid Response Teams (RRTs)** have been deployed across the district. Residents have been urged to stay vigilant and adhere to health protocols to curb the outbreak. Additionally, all poultry birds, eggs, and feed in infected zones will be destroyed as per government guidelines to prevent further spread.



#### Sanitization and Health Measures in East Godavari

Meanwhile, in East Godavari district, strict biosecurity measures have been initiated under the supervision of District Collector P. Prasanti. Authorities have started disinfecting three poultry farms in Kanuru village, and medical tests are being conducted on farm workers to ensure early detection of any health risks.

- **Medical camps** have been set up in 34 villages to monitor the health of residents.
- Sanitation staff are disinfecting poultry farms using sodium chloride solutions to eliminate traces of the virus.
- Special teams have been deployed to assess the virus's spread in Kanuru, Samisragudem, Peravali, and surrounding areas.

Given the severity of the outbreak, the supply of eggs to government schools and Anganwadi centres in East Godavari has been temporarily suspended for a week as a precautionary measure.

#### Authorities on High Alert Amid Growing Concerns

The poultry industry in Andhra Pradesh is on high alert as authorities work to contain the spread of avian influenza. Officials have urged farmers and poultry traders to strictly adhere to biosecurity protocols and report any unusual poultry deaths immediately. Public awareness campaigns are also being conducted to educate locals about safety measures and the importance of early detection.

The situation is being closely monitored, and additional restrictions may be imposed if necessary to prevent further escalation of the crisis. Authorities continue to reassure the public that all necessary precautions are being taken to safeguard both poultry and human health.

### Lithuania Faces Its Largest Bird Flu Outbreak, Raising Regional Concerns

Lithuania has been hit by its most severe bird flu outbreak in recent years, leading to the culling of nearly 250,000 poultry at the Vilkyčių paukštynas farm in the western part of the country. This alarming development has prompted veterinary authorities across the region to issue urgent warnings, calling on poultry farmers to ramp up biosecurity measures to prevent further spread of the disease.

In response, the Lithuanian Food and Veterinary Service has reinforced its guidelines, stressing the importance of strict adherence to safety protocols and immediate reporting of any signs of avian influenza. Farmers across Lithuania have been urged to implement rigorous biosecurity measures, including limiting contact between farmed birds and wild avian species, disinfecting facilities, and monitoring poultry health closely.

Neighboring Latvia has also responded proactively, with the Latvian Food and Veterinary Department issuing a public alert and tightening disease surveillance. In 2024, Latvian veterinary authorities tested 70 wild birds for highly pathogenic avian influenza, with only one positive case detected. However, the recent



outbreak in Lithuania has reignited concerns that the virus could spread across borders, potentially endangering poultry populations in the Baltic region.

#### Possible Origin: Tracing the Virus Back to Poland

Experts believe that the outbreak in Lithuania may have been triggered by the ongoing avian flu crisis in neighboring Poland. According to Vaidotas Kjudulas, chief veterinary officer of the Lithuanian Food and Veterinary Service, Poland has been grappling with multiple outbreaks of highly pathogenic avian influenza, which could have facilitated the virus's spread into Lithuania.

Since the beginning of 2025, Poland has officially recorded 14 outbreaks of avian flu, leading to the culling of approximately 16,000 poultry as authorities attempt to contain the disease. While the transmission route is still under investigation, Polish poultry farms' proximity to Lithuania raises the possibility of cross-border transmission via migratory birds, contaminated feed, or poultry trade.

Nevertheless, Kjudulas cautioned against jumping to conclusions, emphasizing that other potential pathways for the virus's entry into Lithuania are still being considered. Investigations remain ongoing to determine the exact source and mode of transmission.

#### Public Reassurance: Poultry Products Remain Safe

Despite the alarming nature of the outbreak, Lithuanian poultry industry representatives have stepped forward to reassure consumers that poultry products available in stores remain safe for consumption.

Skirmantė Sokolovskienė, head of the quality control department at Vilnius Poultry, a leading broiler meat producer, explained that the company maintains a strict closedcycle production process. "Our birds are fed exclusively with grain sourced from Lithuanian farmers, chicks are hatched within our own hatchery, and all poultry meat is processed in-house. These strict biosecurity measures ensure that no infected product reaches the market," Sokolovskiene stated.

Authorities and poultry experts emphasize that avian influenza does not pose a direct threat to human health when proper food safety measures are followed. Thoroughly cooking poultry meat and eggs effectively eliminates any potential virus, reducing any risk to consumers.

#### A Global Crisis: Bird Flu's Growing Economic and Industry Impact

The outbreak in Lithuania is part of a broader global crisis, as avian influenza continues to cause



significant disruptions to the poultry industry worldwide.

In the United States, a recent outbreak in Massachusetts has led to losses of approximately \$1.4 billion for the local poultry industry. Experts predict that ongoing outbreaks in the country could drive up egg prices by as much as 20% before the year's end. Meanwhile, the UK's poultry industry has been facing severe setbacks, prompting farmers to call on the government for permission to vaccinate their flocks. Industry leaders have described the situation as "devastating" and warned that prolonged outbreaks could have lasting economic repercussions.

As bird flu continues to spread across Europe, North America, and other regions, the need for comprehensive disease prevention strategies is becoming increasingly evident. Many experts are urging governments to explore vaccination programs, enhance monitoring systems, and strengthen international cooperation to contain the virus before it inflicts further damage on the global poultry industry.

#### Conclusion: An Urgent Call for Vigilance and Preparedness

Lithuania's largest bird flu outbreak in years serves as a stark reminder of the persistent threat that avian influenza poses to global poultry farming. The rapid response by veterinary authorities, combined with the industry's reassurances about food safety, offers some level of control over the situation. However, with cases surging in Poland and other parts of Europe, the risk of further outbreaks remains high.

Preventing the spread of avian influenza requires continued vigilance, strict biosecurity protocols, and enhanced cooperation between countries. Farmers, industry leaders, and governments must work together to safeguard poultry populations and ensure the stability of the sector. While immediate containment efforts are crucial, long-term strategies—such as vaccination, improved surveillance, and better farming practices—will be key to mitigating the impact of future outbreaks.

For now, Lithuania, along with its neighbors, remains on high alert, bracing for the next steps in the battle against avian influenza.

### Nearly Four Lakh Chickens Perish in Andhra Pradesh: Authorities Investigate Cause

In a concerning development for the poultry industry, nearly four lakh chickens have perished in West Godavari district and its surrounding areas in Andhra Pradesh over the past 45 days. The significant mortality rate has prompted the Animal Husbandry Department to launch an in-depth investigation, sending samples to high-security laboratories in Bhopal and Vijayawada to determine the cause of the deaths, an official confirmed on Wednesday.

#### Biosecurity Negligence a Major Concern

Damodar Naidu, Director of the Animal Husbandry Department, acknowledged the high mortality rate but emphasized that the numbers reported by farmers might be slightly exaggerated. He attributed the crisis primarily to a lack of adherence to biosecurity measures, which has exacerbated the spread of infections among poultry farms.

"There is mortality, but not to the extent claimed by the farmers. The major concern is that many farmers are neglecting essential biosecurity protocols, which is the primary reason for the rapid spread of diseases in poultry farms," Naidu stated.

He further revealed that some farmers had resorted to improperly disposing of dead birds by dumping them into canals and garbage heaps on streets. Such unhygienic practices have likely accelerated the transmission of infections, putting not just poultry but also public health at risk.





#### Seasonal Outbreaks and Increased Migratory Bird Activity

According to officials, poultry mortality due to seasonal infections is not uncommon in the region. However, the severity of this outbreak has been exacerbated by a combination of factors, including a surge in migratory bird activity and farmers' failure to implement proper disease control measures.

"We see some level of poultry deaths every year due to seasonal factors, but this time, the numbers are higher than usual. The presence of migratory birds, coupled with insufficient precautionary steps taken by poultry farmers, has significantly contributed to the scale of this problem," Naidu explained.

To curb further losses, the Animal Husbandry Department has initiated a series of sensitization programs for farmers. Veterinary officials are actively visiting farms, advising poultry owners on improving hygiene standards, and stressing the importance of biosecurity in disease prevention. Authorities hope these measures will bring the situation under control within the coming days.

Suspected Avian Influenza Outbreak: Laboratory

#### **Confirmation Awaited**

While investigations are still underway, officials suspect that the deaths might be linked to an outbreak of avian influenza, commonly known as bird flu. The department is awaiting test results from the Bhopal laboratory to confirm the presence of the virus.

Avian influenza poses a significant threat to poultry farms worldwide, particularly in large-scale flock management systems where thousands of birds are raised together. Experts warn that while vaccines are available for certain low-pathogenic strains of bird flu, high-pathogenic variants remain a major challenge, as no effective vaccination exists to prevent their spread.

#### Call for Better Poultry Management and Biosecurity Practices

Given the highly contagious nature of viral outbreaks in poultry farms, Naidu emphasized that effective poultry management and strict biosecurity measures are the most reliable defenses against such large-scale mortalities.

"Biosecurity remains the key factor in preventing disease outbreaks in poultry farms. Individual attention to birds in large flocks is impractical, so farmers must ensure strict hygiene, proper disposal of dead birds, and implementation of best management practices to safeguard their livestock," he added.

The Animal Husbandry Department continues to monitor the situation closely and remains committed to supporting poultry farmers with necessary guidance and intervention to prevent further losses.

NUQO Strengthens Commercial Team in India with the Appointment of Sudhir Kumar Srivastava as Regional Sales Manager

NUQO© is excited to announce the appointment of Sudhir Kumar Srivastava as Regional Sales Manager for North India. Sudhir joins the team with a strong track record in the animal health and nutrition industry, having held key positions at Cargill Premix Nutrition and Intas Pharmaceuticals.

With over a decade of expertise, Sudhir has successfully driven key client engagement, sales growth, and market expansion across North India. His focus on strategic planning, relationship management, and achieving measurable results makes him an excellent addition to NUQO's growing presence in India.



**Dr. Krishnamurthy,** Commercial Director, South Asia, added: I am delighted to welcome Sudhir to the NUQO family. His deep understanding of the market and dedication to excellence will be pivotal as we work together to deliver value to our customers. I look forward to seeing him thrive in this new role and contribute to NUQO's growth in India."



**Neeraj Kumar Srivastava,** Managing Director, South Asia,



#### shared:

"Sudhir's proven ability to build strong customer connections and deliver results aligns perfectly with our vision for the South Asia region. His leadership and market knowledge will be instrumental in achieving our ambitious growth plans. We are excited to see him contribute to NUQO's mission of driving innovation in animal nutrition."

Sudhir's appointment reflects NUQO's commitment to delivering exceptional value to its customers by combining innovation and sustainability. As Regional Sales Manager, he will lead initiatives to enhance customer satisfaction, expand market reach, and support the continued success for NUQO Animal Nutrition India.

### Chicken Prices Plummet Amid Bird Flu Fears in Andhra Pradesh and Telangana

The poultry industry in Andhra Pradesh and Telangana is currently facing an alarming crisis following the confirmation of avian influenza (H5N1) in Andhra Pradesh. The outbreak has led to widespread panic among consumers, causing a significant drop in demand for chicken and eggs. As a result, poultry prices have crashed dramatically, dealing a severe blow to poultry farmers and traders.

#### Bird Flu Confirmed in Andhra Pradesh

The recent deaths of chickens in Andhra Pradesh, particularly in East Godavari and West Godavari districts, raised serious concerns among poultry farmers and health officials. Samples from affected farms in Velpur and Kanur were sent to the National Institute of High Security Animal Diseases (NIHSAD) in Bhopal for testing. The institute confirmed the presence of H5N1 avian influenza, commonly known as bird flu.

Following the confirmation, the Andhra Pradesh Animal Husbandry Department took swift action to contain the outbreak. Infected birds were culled and buried to prevent further spread of the virus. Additionally, the state government issued stringent guidelines for poultry farms, ensuring biosecurity measures were strictly followed.

In light of the outbreak, the state administration has also imposed prohibitory orders in the affected regions, restricting the movement of poultry to curb the spread of the virus. The government has urged citizens to refrain from consuming chicken from affected areas until the situation is under control. Helplines have been established to provide guidance and support to farmers and consumers.

#### Impact on Poultry Prices and Industry

The confirmation of bird flu has severely impacted the poultry industry, leading to a steep decline in chicken prices. Before the outbreak, chicken was sold at ₹250 per kilogram. However, following the news of bird flu, prices have nosedived to ₹150 per kilogram. In some regions of Andhra Pradesh, particularly in East and West Godavari districts, prices have fallen even further, with chicken being sold at a mere ₹30-₹50 per kilogram.

Poultry farmers are bearing the brunt of the situation, struggling to sustain their businesses as the cost of rearing poultry continues to outweigh the selling price. "This is a distressing time for us," said Venkat, a poultry farmer from West Godavari. "We are taking every precaution, including culling infected birds and maintaining strict hygiene measures, but the fear among consumers is causing a drastic drop in sales. If the situation persists, many farmers may be forced out of business."

#### Situation in Telangana

While Telangana has not officially

confirmed any bird flu cases, the state is witnessing an alarming rise in poultry deaths. Thousands of birds have reportedly died in Nizamabad and Kamareddy districts. The government has intensified surveillance and preventive measures, including setting up border checkposts to monitor poultry transportation from Andhra Pradesh.

Sachi Ghosh, Telangana's Animal Husbandry Department Principal Secretary, has reassured the public, emphasizing the importance of consuming properly cooked poultry products. "There is no scientific evidence that bird flu spreads to humans through cooked meat or eggs. The virus is primarily transmitted from bird to bird. However, we urge consumers to ensure proper cooking practices and hygiene while handling poultry products."

## Preventive Measures and Government Response

Both Andhra Pradesh and Telangana governments are working rigorously to control the spread of avian influenza. The Andhra Pradesh government has implemented several precautionary measures, including:

- Culling and safe disposal of infected birds
- Disinfecting poultry farms and affected areas
- Imposing movement restrictions on poultry and poultry products
- Launching awareness campaigns to educate farmers and consumers about bird flu and its prevention

Similarly, the Telangana government has:

• Strengthened border controls to prevent the movement of poultry from infected regions

- Increased monitoring of poultry farms
- Conducted awareness drives among farmers and traders
- Set up emergency response teams to tackle any potential outbreak

#### Consumer Behavior and Market Trends

Despite government reassurances, consumer sentiment remains negative. Many people have stopped purchasing chicken and eggs due to the fear of contracting the virus. Poultry traders report a drastic fall in sales, further exacerbating the crisis in the industry.

Chitturi Suresh, Chairman of the International Egg Commission, highlighted the cyclical nature of poultry price fluctuations. "Prices tend to dip in February, and this trend is expected to continue. While the fear of bird flu has impacted the market significantly, it's important to note that the virus does not spread through properly cooked chicken and eggs. Awareness is key, and the government must step up efforts to educate the public. Additionally, vaccination strategies should be explored to prevent future outbreaks."

Interestingly, while chicken prices in Andhra Pradesh and Telangana have dropped to record lows, egg prices in international markets have surged. "It's quite ironic," Suresh added. "While eggs are being sold at ₹100 per dozen in the US, our local poultry farmers are struggling to make ends meet. The government should step in and provide financial relief to farmers during this crisis."

## The Way Forward for the Poultry Industry

The poultry industry in Andhra

Pradesh and Telangana is at a critical juncture. While immediate containment of the bird flu outbreak is the top priority, longterm strategies are needed to ensure the sustainability of the sector.

#### **Key Recommendations:**

- 1. Strengthening Biosecurity Measures: Poultry farms must adopt strict biosecurity protocols, including regular disinfection, vaccination programs, and restricted farm access to prevent future outbreaks.
- 2. Public Awareness Campaigns: The government and poultry associations should collaborate to educate consumers about the safety of consuming wellcooked chicken and eggs.
- 3. Financial Assistance for Farmers: Many small-scale poultry farmers are facing financial distress. The government should consider providing subsidies or lowinterest loans to help them recover losses.

- 4. Promoting Exports: With domestic demand declining, India should explore opportunities to export poultry products to international markets where demand remains high.
- 5. Developing a Robust Disease Monitoring System: Early detection and response can prevent outbreaks from escalating. A well-equipped disease surveillance network should be established across states.

The confirmation of bird flu in Andhra Pradesh and the suspected cases in Telangana have sent shockwaves through the poultry industry. Farmers are struggling with plummeting prices and declining sales, while consumers remain wary despite reassurances from health officials.

The immediate focus must be on containment and consumer awareness. Properly cooked poultry products remain safe for consumption, and unnecessary panic must be avoided. Meanwhile, the government should consider long-term strategies to support the industry and prevent future outbreaks.

As the situation unfolds, vigilance, cooperation, and informed decision-making will be crucial in stabilizing the poultry sector and ensuring its resilience against future challenges.

### Golden Jubilee of AICRP on Poultry Breeding Celebrated

Golden Jubilee Celebrations of All India Coordinated Research Project (AICRP) on Poultry Breeding was organised today at ICAR-Directorate of Poultry Research, Hyderabad. The event marked 50 years of dedicated efforts directed towards genetic improvement in poultry breeding and the development of rural chicken varieties, with a focus on fostering self-reliance in the backyard poultry sector. It has also significantly contributed towards improving rural livelihoods and enhancing





nutritional security in the country. The Chief Guest, Dr Raghavendra Bhatta, Deputy Director General (Animal Science), ICAR, emphasized the project's role in enhancing the productivity of rural chicken varieties, benefiting farmers across India.

On this occasion, two chicken varieties, Janapriya, a dual-purpose rural chicken variety, and Aslibro, an alternative variety for native chicken farming, were released by Dr Bhatta.

Dr G. K. Gaur, Assistant Director General (Animal Production and Breeding), ICAR, and Dr S. B. Barbuddhe, Director, ICAR-NMRI,

20 EMERGING ANIMAL HEALTH

Hyderabad, graced the function as Guests of honour.

Dr R. N. Chatterjee, Director, ICAR-DPR, provided an overview of the history of AICRP on Poultry Breeding, highlighting its achievements in developing and improving elite layer and broiler lines, creating location-specific rural chicken varieties, and characterizing and conserving indigenous chicken breeds.

Dr U. Rajkumar, In-charge, AICRP, Poultry Breeding, briefed the achievements of AICRP and its contribution to the development of the poultry sector in the country.

Farmers from Karnataka, Bihar, and

Nagaland shared their feedback on the benefits of the chicken germplasm received from AICRP centers, highlighting its positive impact on backyard poultry farming in their regions.

Principal Investigators (PIs) of various AICRP centers, former PIs, farmers, officials from PVNRTVU and State Animal Husbandry departments, staff members, and students actively participated in the celebrations, making the event a grand success.

The event was followed by the Annual Review Meeting of AICRP on Poultry Breeding 2023-24.

PharmaShots





## 21-22-23 AUG. 2025

India Expo Center & Mart Greater Noida, Delhi - NCR, India

## INTERNATIONAL EXHIBITION ON POULTRY SECTOR



### **Exhibit Profile**

Breeding, artificial insemination, embryo technology | Feed and feed ingredients | Feed additives | Feed Machinery | Feeding System | Veterinary Medicine and Vaccine | Veterinary Examination | Smart livestock farming | Egg grading, washing, packaging | Incubation | Environmental Control system | Poultry Farming Equipment | Farm Disinfection | Farmland Design and engineering | Livestock house solar energy system | Biogas Technology | Animal waste recycling management | Facilities with Animal Welfare | Wastewater treatment | Meat Products | Cold Rooms & Allied Equipment | Cage culture equipment | Poultry farming equipment and many more...



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## Editorial Calendar 2025

Publishing Month: January Article Deadline : 28 <sup>th</sup> , Dec. 2024 Advertising Deadline : 30 <sup>th</sup> , Dec. 2024 Focus : Opportunities and Challenges	Publishing Month: <b>February</b> Article Deadline : <b>28<sup>th</sup>, Jan. 2025</b> Advertising Deadline : <b>30<sup>th</sup>, Jan. 2025</b> Focus : <b>Budget</b>	Publishing Month: March Article Deadline : 26 <sup>th</sup> , Feb. 2025 Advertising Deadline : 28 <sup>th</sup> , Feb. 2025 Focus : Disease Prevention	Publishing Month: <b>April</b> Article Deadline : <b>28<sup>th</sup>, March 2025</b> Advertising Deadline : <b>30<sup>th</sup>, March 2025</b> Focus : <b>Summer Stress</b> <b>Management</b>					
Publishing Month: <b>May</b> Article Deadline : <b>28<sup>th</sup>, April 2025</b> Advertising Deadline : <b>30<sup>th</sup>, April 2025</b> Focus : <b>Cold Chain</b>	Publishing Month: June Article Deadline : 28 <sup>th</sup> , May 2025 Advertising Deadline : 30 <sup>th</sup> , May 2025 Focus : Nutrition	Publishing Month: July Article Deadline : 28 <sup>th</sup> , June 2025 Advertising Deadline : 30 <sup>th</sup> , June 2025 Focus : Biosecurity	Publishing Month: <b>August</b> Article Deadline : <b>28<sup>th</sup>, July 2025</b> Advertising Deadline : <b>30<sup>th</sup>, July 2025</b> Focus : <b>Sustainability</b>					
Publishing Month: September Article Deadline : 28 <sup>th</sup> , August 2025 Advertising Deadline : 30 <sup>th</sup> , August 2025	Publishing Month: October Article Deadline : 28 <sup>th</sup> , September 2025 Advertising Deadline : 30 <sup>th</sup> , September 2025	Publishing Month: November Article Deadline : 28 <sup>th</sup> , October 2025 Advertising Deadline :	Publishing Month: December Article Deadline : 28 <sup>th</sup> , November 2025 Advertising Deadline :					
Focus : Egg Production & Processing	Focus : Processing & Packaging	30 <sup>th</sup> , October 2025 Focus : Winter Stress	30 <sup>th</sup> , November 2025 Focus : Food Safety					
Egg Production & Processing Subscription Rates Time Period 1 Year INR 2400 USD 25 3 Year INR 6500 USD 65 5 Year INR 10000 USD 10	Processing & Packaging We wish to subscribe to Poultry Planner 1 Year  3 Year  5 Year 0 pairy Planner 0 Dairy Planner 0 1 Year  3 Year  5 Year	Focus : Winter Stress	Focus : Food Safety					
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## **EGG Daily and Monthly** Prices of January 2025

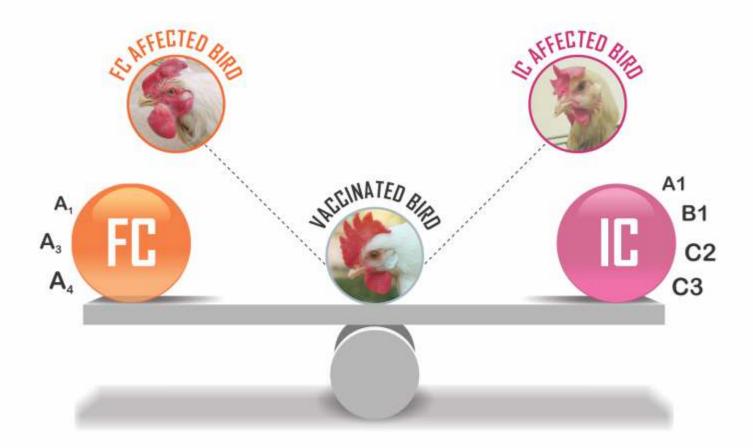
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Name Of Zone / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average
NECC SUGO	GEST	ED I	EGG	PRI	CES																											
Ahmedabad	575	580	580	550	550	520	520	525	530	535	-	535	535	-	535	535	535	535	540	540	540	540	540	510	510	510	510	515	520	520	520	534.14
Ajmer	580	580	560	540	540	525	510	520	522	518	515	495	485	485	485	485	485	485	489	489	470	470	470	470	460	460	470	470	463	463	445	496.90
Barwala	574	560	560	560	505	505	505	515	520	520	500	495	485	485	485	485	485	485	489	475	470	470	470	460	455	455	460	463	463	445	442	491.81
Bengaluru (CC)	560	565	565	565	540	515	515	520	525	525	525	525	525	525	525	525	505	510	520	520	520	520	520	520	520	520	520	525	530	535	535	527.90
Brahmapur (OD)	558	560	560	540	530	505	505	525	530	530	530	530	520	520	520	505	505	505	515	515	515	515	505	495	495	495	500	500	500	500	500	517.03
Chennai (CC)	570	570	570	570	550	550	530	530	530	530	530	530	530	530	530	530	510	510	510	510	510	510	510	510	530	530	530	550	560	560	560	534.84
Chittoor	563	563	563	563	543	543	523	523	523	523	523	523	523	523	523	523	503	503	503	503	503	503	503	503	523	523	523	543	553	553	553	527.84
Delhi (CC)	630	630	620	600	590	580	570	570	570	570	570	560	550	540	540	540	540	530	530	530	515	515	515	500	500	500	500	500	500	500	480	544.68
E.Godavari	540	545	550	525	525	500	500	505	510	515	515	515	515	515	515	515	495	495	503	505	505	505	505	485	485	485	475	485	490	490	490	506.55
Hospet	510	515	515	515	490	465	465	470	475	475	475	475	475	475	475	475	455	460	470	470	470	470	470	470	470	470	470	475	480	485	485	477.90
Hyderabad	520	525	525	525	500	475	475	480	485	490	490	490	490	490	490	490	470	475	480	480	480	480	480	460	460	460	465	470	475	480	480	485.00
Jabalpur	565	565	565	535	520	520	505	515	520	520	520	520	520	500	500	500	500	500	500	503	503	495	495	495	485	485	490	490	495	495	495	510.19
Kolkata			Ħ			550		F				F					F		560					_					-	550		564.83
Ludhiana	570	570	570	555	555	555	505	505	515	518	518	518	500	481	481	481	481	481	483	487	487	468	468	468	468	453	453	460	460	460	460	497.87
Mumbai																			550													550.32
Mysuru	563	568	568	568	543	518	518	520	525	525	525	525	525	525	525	525	505	510	520	520	-	520	520	520	520	520	520	525	530	535	535	528.87
Namakkal	530	530	530	530	505	480	480	480	480	480	480	480	480	480	480	480	460	480	480	480	480	480	485	485	490	490	490	495	500	505	505	490.65
Pune	580	585	585	585	570	550	550	550	550	555	555	555	555	540	540	540	540	545	550	550	550	550	550	540	530	530	530	535	540	545	545	550.81
Raipur	550	555	555	555	530	520	500	505	515	520	520	520	500	500	500	500	500	500	500	510	510	500	500	500	500	490	490	500	500	505	505	511.45
Surat	580	580	580	580	550	535	535	540	540	545	-	545	545	-	535	540	540	540	545	545	545	545	545	520	520	520	525	525	530	530	530	542.59
Vijayawada	545	550	550	535	525	500	500	505	510	515	515	515	515	515	515	515	500	500	510	510	510	510	510	490	490	490	480	500	500	500	500	510.48
Vizag	570	570	570	545	545	510	510	510	515	520	520	520	520	520	520	520	500	500	505	505	505	505	505	485	485	485	485	495	505	505	505	514.84
W.Godavari	540	545	550	525	525	500	500	505	510	515	515	515	515	515	515	515	495	495	503	505	505	505	505	485	485	485	475	485	490	490	490	506.55
Warangal	522	527	527	527	502	477	477	482	487	492	492	492	492	492	492	492	472	477	482	482	482	482	482	462	462	462	467	472	477	482	482	487.00
Prevailing P																																
Allahahad			610	600	590	581	571	571	586	590	590	590	590	571	557	552	548	548	548	548	548	538	505	505	505	510	510	514	514	514	514	556.97
Bhopal	560	550	560	540	540	530	515	520	530	535	535	535	515	515	500	500	500	500	500	510	510	510	500	500	485	485	495	505	505	505	490	515.48
Indore (CC)	560	560	550	540	530	530	520	520	520	520	520	510	500	500	500	500	500	500	500	500	500	490	480	480	480	480	490	495	490	490	480	507.58
Kanpur (CC)	614	600	586	581	571	571	548	562	562	562	562	562	548	548	548	548	533	533	548	548	548	548	524	524	510	510	510	510	510	500	500	546.10
Luknow (CC)	650	633	620	610	610	603	580	580	580	580	580	573	570	570	567	567	557	550	550	550	550	550	524	524	533	516	516	516	516	516	516	563.13
Muzaffurpur (CC)	635	635	620	620	615	565	565	575	580	580	580	565	550	550	550	550	550	550	552	552	530	530	530	530	520	520	520	520	520	520	505	557.55
Nagpur	560	560	570	570	550	530	530	530	530	-	530	530	520	510	505	505	505	505	510	510	510	510	490	490	485	485	485	495	505	505	505	517.50
Patna	635	635	620	620	615	565	565	575	580	580	580	565	550	550	550	550	550	550	552	552	552	530	530	530	520	520	520	520	520	520	505	558.26
Ranchi	638	638	629	610	600	590	581	590	590	590	590	580	571	562	562	557	552	548	548	548	548	543	543	533	533	529	529	529	529	524	524	565.74
(CC)																	1 D															



# Fowl Cholera And Infectious Coryza Vaccine Inactivated

## One Shot two targets





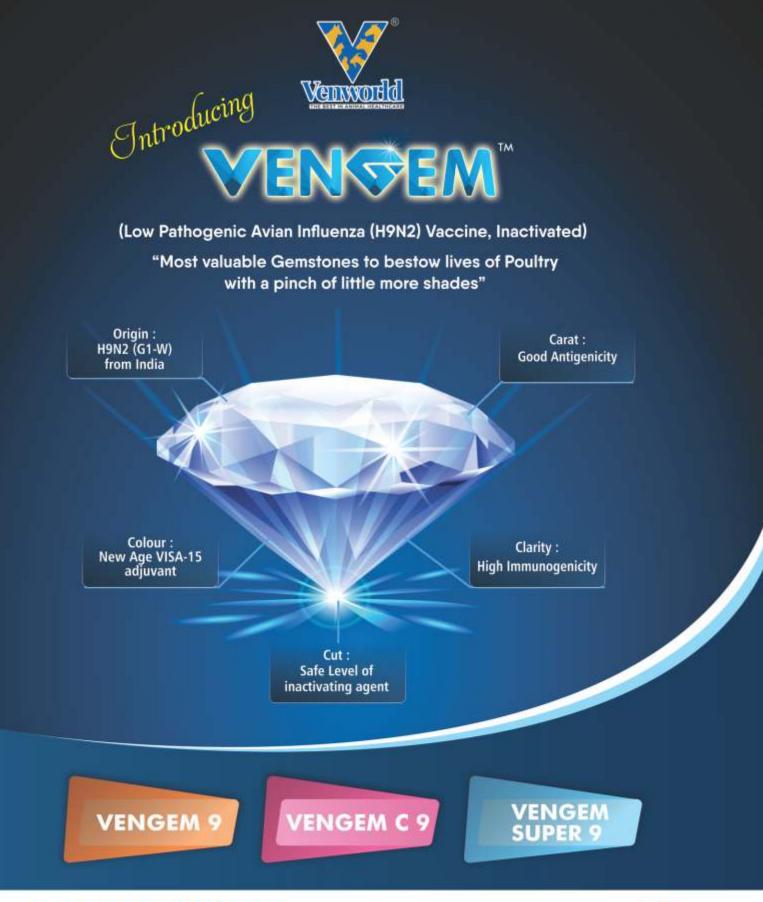


VENTRI BIOLOGICALS (Vaccine Division of VHPL)

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