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POULTRY PLANNER

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POULTRY PLANNER

10 Common Mistakes in Poultry Farming

- Inadequate housing and ventilation
- Poor biosecurity measures
- Poor Nutrition management
- Ignoring hygiene practices
- Failure to monitor health regularly
- Improper handling and management
- Lack of pest and predator control
- Inadequate record keeping
- Ignoring environmental factors
- Overlooking biosecurity training for staff

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ROSS 308 AP BEST ACHIEVERS NOVEMBER-2025

Aviagen INDIA

Northern Region

COMPANY: Sampoorna Feeds

FARMER NAME: Mr.Jashandeep Singh Sidhu

NOVEMBER-2025	Top #1
Farm Type	Open House
State	PUNJAB
Chicks Placed	2509
Mean Age	33.0
Avg Body Wt	2460
FCR	1.260
cFCR	1.158
Livability%	97.0
Daily Gain	74.5
EPEF	573.9

Eastern Region

COMPANY: IB Group

FARMER NAME: Mr. Kamal Krishna Roy

NOVEMBER-2025	Top #1
Farm Type	Open House
State	BENGAL
Chicks Placed	1354
Mean Age	36.0
Avg Body Wt	2777
FCR	1.468
cFCR	1.295
Livability%	95.6
Daily Gain	77.1
EPEF	502.6

Central Region

COMPANY: Japfa

FARMER NAME: Mr. Suhas Patil

NOVEMBER-2025	Top #1
Farm Type	EC House
State	MAHARASHTRA
Chicks Placed	5972
Mean Age	33.4
Avg Body Wt	2463
FCR	1.369
cFCR	1.266
Livability%	97.1
Daily Gain	73.8
EPEF	523.3

South Region

COMPANY: IB Group

FARM NAME: K S Poultry Farms

NOVEMBER-2025	Top #1
Farm Type	EC House
State	KARNATAKA
Chicks Placed	25945
Mean Age	36.0
Avg Body Wt	2731
FCR	1.483
cFCR	1.321
Livability%	97.1
Daily Gain	75.9
EPEF	496.9

NOVEMBER-Top PERFORMANCE BY AREA

Area	Chicks Placed	Mean Age	BW	FCR	cFCR(2Kg)	Livability%	Daygain	EPEF
North EC House	12030	35.3	2631	1.370	1.230	97.2	74.5	528.3
North Open House	2509	33.0	2460	1.260	1.158	97.0	74.5	573.9
East EC House	6572	34.0	2357	1.427	1.348	97.2	69.3	472.2
East Open House	1354	36.0	2777	1.468	1.295	95.6	77.1	502.6
Central EC House	5972	33.4	2463	1.369	1.266	97.1	73.8	523.3
Central Open House	2793	32.3	2271	1.387	1.326	97.2	70.3	492.9
South EC House	25945	36.0	2731	1.483	1.321	97.1	75.9	496.9
South Open House	7616	36.0	2415	1.402	1.310	94.9	67.1	454.2

NOVEMBER-Top 10 FIELD PERFORMANCE

Flock	Farm Type	State	Chicks Placed	Mean Age	BW	FCR	cFCR	Livability%	Day Gain	EPEF
Flock 1	OPEN HOUSE	PUNJAB	2509	33.0	2460	1.260	1.158	97.0	74.5	573.9
Flock 2	OPEN HOUSE	PUNJAB	10390	33.0	2491	1.330	1.221	97.0	75.5	551.0
Flock 3	EC HOUSE	PUNJAB	12030	35.3	2631	1.370	1.230	97.2	74.5	528.3
Flock 4	OPEN HOUSE	PUNJAB	2505	32.1	2393	1.360	1.273	95.8	74.5	524.8
Flock 5	EC HOUSE	MAHARASHTRA	5972	33.4	2463	1.369	1.266	97.1	73.8	523.3
Flock 6	OPEN HOUSE	UTTAR PRADESH	9389	40.0	2960	1.347	1.134	95.1	74.0	522.3
Flock 7	OPEN HOUSE	PUNJAB	14630	32.0	2293	1.320	1.255	95.8	71.6	519.6
Flock 8	OPEN HOUSE	HARYANA	3775	29.0	1951	1.250	1.261	95.7	67.3	515.1
Flock 9	EC HOUSE	MAHARASHTRA	15489	32.6	2370	1.375	1.293	97.5	72.6	514.7
Flock 10	EC HOUSE	MAHARASHTRA	7875	35.0	2582	1.386	1.257	96.5	73.8	514.1

From the Editor's Desk

Opportunities and Challenges in the Poultry Sector

The poultry sector has emerged as one of the fastest-growing segments of Indian agriculture, playing a vital role in food security, employment generation and farmer income. With rising population, urbanization and changing dietary habits, demand for poultry meat and eggs continues to grow steadily. This momentum presents significant opportunities, but the sector also faces structural and operational challenges that must be addressed for sustainable growth.

One of the key opportunities in the poultry industry lies in **increasing consumption and value addition**. Poultry products are affordable, high-quality sources of protein, making them essential for improving national nutrition. Growth in processed and ready-to-cook poultry products, driven by urban lifestyles and organised retail, is opening new revenue streams for integrators and entrepreneurs. Export potential for processed poultry products is also expanding, provided quality and biosecurity standards are consistently met.

Technological advancements offer another major opportunity. Modern breeding practices, precision feeding, climate-controlled housing, automation and digital monitoring systems are helping improve feed efficiency, bird health and overall productivity. Innovations in vaccines, diagnostics and disease management are strengthening biosecurity and reducing mortality. When adopted effectively, these technologies can significantly improve profitability and resilience across the value chain.

However, the poultry sector faces several challenges. **Feed cost volatility**, particularly maize and soybean prices, remains the biggest concern, as feed accounts for nearly 65–70 percent of production costs. Disease outbreaks such as avian influenza continue to pose risks, affecting farmer confidence, market stability and consumer sentiment. Climate change, with rising temperatures and unpredictable weather patterns, further adds to stress on birds and increases production costs.

Another pressing challenge is **market instability and price fluctuations**, especially for small and medium farmers who lack strong market linkages and risk-management mechanisms. Limited access to credit, insurance and technical guidance often restricts their ability to adopt modern practices. In addition, misinformation during disease outbreaks can severely impact consumption, highlighting the need for effective communication and consumer awareness.

To unlock the full potential of the poultry sector, a coordinated approach is essential. Strengthening farmer education, promoting scientific management, ensuring fair market access and encouraging investment in infrastructure and processing will be key. With the right blend of policy support, innovation and collaboration, the poultry industry can continue to be a powerful driver of rural livelihoods, nutrition and economic growth.

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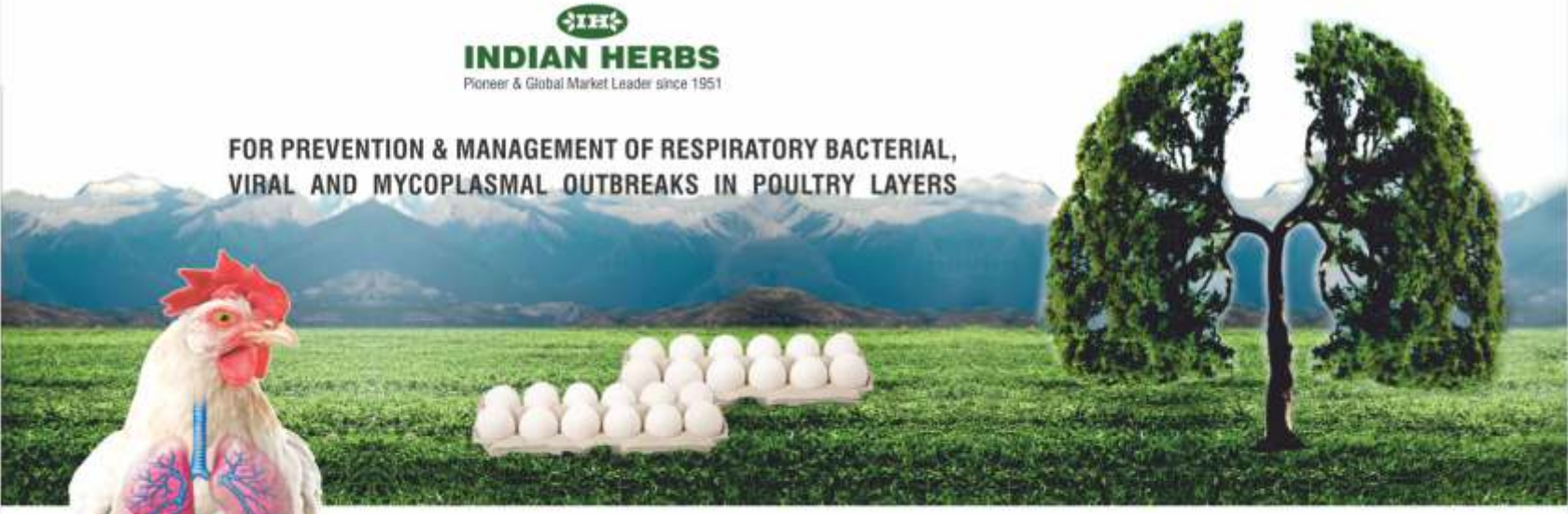

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3-4 Weeks	9-20 Weeks	20 ml
5-6 Weeks	21-72 Weeks	40 ml

PRESENTATION

Powder : 10 kg & 25 kg
Liquid : 1 Ltr & 5 Ltr

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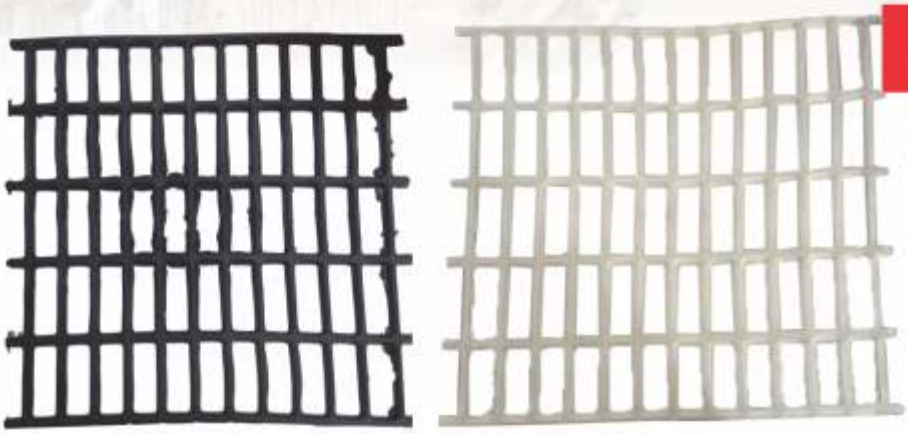

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Cultured Poultry Meat: How Lab-Grown Chicken is Reshaping the Future of Protein

By

Dr. Shivam Singh Thakur

MVSc (Livestock Products Technology), PGIVER Jaipur

The global demand for poultry meat is rising at an unprecedented pace. With growing populations, urban lifestyles, and increased health awareness, chicken has become the world's most preferred animal protein. However, the traditional poultry sector faces mounting challenges—disease outbreaks, antibiotic resistance, environmental pressures, welfare concerns, and resource limitations. Amid these complexities, a revolutionary innovation is emerging at the forefront of food technology: cultured poultry meat, also known as lab-grown, cell-based, or cultivated chicken.

This groundbreaking biotechnology promises to transform the protein landscape by producing real meat—not plant-based imitation—without raising or slaughtering birds. As the world enters a new era of sustainable food systems, cultured poultry meat stands out as a powerful disruptor with enormous potential.

What Exactly Is Cultured Poultry Meat?

Cultured meat is produced by taking a small sample of chicken cells—usually stem cells—from a live bird and placing them in a controlled bioreactor environment. These cells are then provided nutrients (amino acids, carbohydrates, vitamins, minerals) that allow them to multiply and grow into muscle and fat tissues, just like they would inside the animal's body.

The result? Real chicken meat with the same proteins, same flavor compounds, and same nutritional profile—just produced differently.

Why Cultured Chicken Is Gaining Global Attention

1. **Sustainability and Environmental Impact**

   Traditional poultry production requires significant land, water, feed grains, and energy. Cultured meat reduces land use by up to 90%, water consumption by 70–80%, and greenhouse gas emissions significantly.

2. **Freedom from Antibiotics**

   Since cultured chicken is grown in sterile bioreactors, it does not need antibiotics, growth promoters, or

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Benefits

01 Improves immunity and reduce incidence of respiratory and viral diseases

02 Composition of essential oils makes it a strong expectorant, which helps to reduce the respiratory problems

03 The best treatment and prevention of CRD and CCRD

04 Improve carcass traits along with optimum performance of bird to get maximum production and efficiency

05 Acts as a relaxing, antiseptic, spasmolytic, soothing, softening and cooling muscle anti-inflammatory agent

06 Acts as antiviral, antibacterial, anti-inflammatory and anti -oxidant which improves overall health and efficiency of bird

Dosage

Drinking Water-

150 to 200ml / 1000 litre of water

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coccidiostats—directly addressing global concerns regarding antimicrobial resistance (AMR).

3. **Reduced Disease Risk**

   No flock means no outbreaks of avian influenza, Newcastle disease, Salmonella, or Campylobacter.

4. **Ethical and Welfare-Friendly**

   Minimal animal involvement and no slaughter make it more acceptable to modern consumers.

5. **Standardized Quality**

   Bioreactors allow precise control over fat content, texture, nutrient profile, and flavor.

How Cultured Chicken Is Produced

1. Cell collection from a healthy bird
2. Stabilizing and selecting efficient cell lines
3. Growing cells in nutrient media
4. Differentiation into muscle and fat tissues
5. Structuring using scaffolds or 3D bioprinting
6. Harvesting and processing into final products

Global Momentum

- **USA:** Companies like GOOD Meat, JUST, and UPSIDE Foods lead commercialization.
- **Singapore:** First country to approve cultured chicken for sale.
- **Europe:** Heavy investment in pilot plants and regulatory frameworks.
- **Middle East:** Building large-scale bioreactor facilities for food security.

India's Position

India is entering the cultured meat space with efforts from:

- CCMB
- ICAR institutes
- Bengaluru and Hyderabad-based startups
- FSSAI exploring future regulations

Challenges

- High production costs
- Scaling large bioreactors
- Consumer acceptance
- Regulatory approvals
- Price parity with traditional chicken

Future Outlook

Cultured chicken will not immediately replace traditional poultry. Instead, both will coexist. Lab-grown chicken will target urban, premium, and export markets, while hybrid products will rise.

Conclusion

Cultured poultry meat is one of the most revolutionary innovations in modern food technology. It promises sustainability, safety, ethics, and reliability. The future of poultry is not limited to farms—it may soon be shaped inside bioreactors.

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Challenges and Opportunities in Poultry Farming

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Introduction

Poultry farming has emerged as one of the most dynamic and rapidly growing segments of Indian agriculture, contributing significantly to food security, rural employment, and the national economy. India ranks among the top global producers of eggs and broiler meat, with poultry serving as a major source of affordable animal protein for millions of households. However, despite impressive growth, the sector faces several structural and operational challenges that constrain its full potential. At the same time, rising demand, technological advances, and policy support are opening up new opportunities for sustainable expansion and value addition.

Major Challenges in the Poultry Sector

1. **High and Volatile Feed Costs**

   Feed accounts for 65–75% of total production cost in poultry, with maize and soybean meal being the primary ingredients. In recent years, sharp increases in maize and soybean prices, driven by global market trends and domestic demand for biofuels, have severely squeezed farm profitability.

2. **Disease Outbreaks and Biosecurity Gaps**

   Recurrent disease outbreaks, especially avian influenza (bird flu) and endemic diseases like coccidiosis and Newcastle disease, remain a major threat to flock health and consumer confidence. Poor biosecurity on many small and medium farms, inadequate veterinary services in rural areas, and delayed disease reporting systems further exacerbate the risk of rapid spread and economic losses. Without stronger surveillance, vaccination coverage, and farmer training, disease will continue to be a key constraint on production and trade.

3. **Price Instability and Market Volatility**

   The poultry market is highly sensitive to supply and demand imbalances, leading to frequent price crashes and farmer distress. Periods of oversupply, especially during festivals or after disease-free periods, can cause broiler and egg prices to fall below the cost of production, forcing many farmers into losses. At the same time, sudden spikes in feed or energy costs push retail prices up, affecting consumer affordability and demand. This volatility discourages long-term investment and makes contract farming and price stabilization mechanisms essential for farmer welfare.

4. **Infrastructure and Supply Chain Gaps**

   Despite growth, the poultry sector still suffers from inadequate cold chain, processing, and logistics infrastructure. A large portion of poultry meat and eggs are sold in the unorganized sector without proper chilling, leading to high post-harvest losses and

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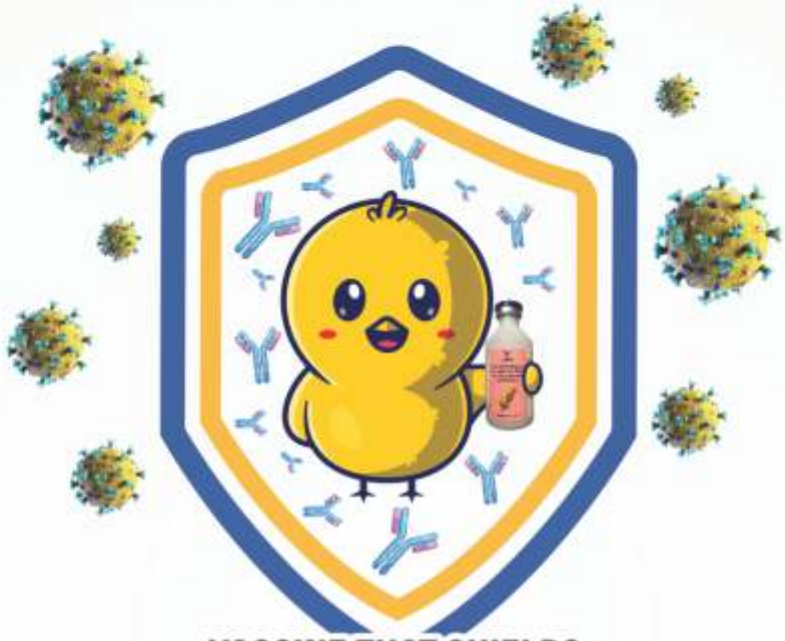

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food safety risks. Limited access to modern abattoirs, slaughterhouses, and value-added processing units restricts the ability of producers to meet quality standards for domestic premium markets and exports. Poor rural connectivity and fragmented distribution networks also increase transaction costs and reduce farmers share in the final price.

5. **Environmental and Sustainability Concerns**

   Intensive poultry farming generates large quantities of manure, wastewater, and litter, if not managed properly, can pollute soil and water resources. Many farms lack scientific waste treatment systems, and there is growing concern about antibiotic residues, heavy metals, and greenhouse gas emissions from poultry operations. At the same time, rising water scarcity and climate change are increasing the cost and risk of production, especially in drought-prone regions. Sustainable intensification, circular economy models, and adoption of cleaner technologies are needed to address these environmental challenges.

6. **Competition from Alternative Proteins**

   The poultry sector now faces increasing competition from plant-based meat alternatives and other protein sources, driven by health, ethical, and environmental concerns among urban consumers. While poultry remains cheaper and more widely accepted than many alternatives, the growth of vegan and flexitarian diets, especially among younger and affluent consumers, poses a long-term challenge to market share. To remain competitive, the industry must emphasize the nutritional benefits of poultry, improve animal welfare standards, and adopt transparent, sustainable practices.

Key Opportunities in the Poultry Sector

1. **Rising Demand for Animal Protein**

   India's growing population, rising incomes, and urbanization are driving strong demand for eggs and chicken as affordable, high-quality protein sources. Per capita consumption of eggs and poultry meat is still well below global averages, indicating substantial room for growth in both rural and urban markets. Government nutrition programs, such as mid-day meals and ICDS, are also promoting egg consumption, further boosting demand and creating a stable market for producers.

2. **Growth of Premium and Niche Segments**

   Health-conscious consumers are increasingly seeking organic, antibiotic-free, free-range, and cage-free poultry products, creating high-value niche markets. These premium segments command better prices and margins, offering farmers and processors a pathway to higher incomes. By adopting better housing, feeding, and health management practices, small and medium farmers can access these premium markets through certification and branding, thereby improving their profitability and resilience.

3. **Value Addition and Processed Products**

   There is a growing shift from raw meat and eggs to value-added and convenience products, such as frozen chicken, marinated items, ready-to-cook (RTC) and ready-to-eat (RTE) meals, and egg-based products like liquid egg and egg powder. This trend is driven by changing lifestyles, the rise of quick-service restaurants, and e-commerce platforms that deliver poultry products to urban homes. Investing in modern processing units, packaging, and branding can help farmers and entrepreneurs capture more value from each bird and reduce dependence on volatile raw markets.

4. **Technological Advancements and Digitalization**

   Modern technologies are transforming poultry farming into a more efficient, data-driven enterprise. Climate-controlled sheds, automated feeding and watering systems, AI-based monitoring of flock health and environment, and precision nutrition tools are improving productivity and reducing losses. Digital platforms and mobile apps are also helping farmers access real-time market prices, veterinary advice, and input suppliers, thereby reducing information asymmetry and transaction costs. Startups and agri-tech firms are playing a key role in driving this "Poultry 4.0" revolution in India.

5. **Export Potential and Global Markets**

   India has significant potential to expand its poultry exports, especially to the Middle East,

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Southeast Asia, and Africa, where demand for halal-certified chicken and egg products is rising. With improved quality standards, better disease control, and modern processing infrastructure, Indian poultry can compete in international markets and earn valuable foreign exchange. Government schemes that support export-oriented units, cold chain development, and certification can further boost the sector's global footprint.

6. **Employment and Rural Livelihoods**

Poultry farming is a major source of rural employment, generating jobs not only on farms but also in feed manufacturing, hatcheries, veterinary services, transportation, and retail. Backyard and small-scale poultry, in particular, provide supplementary income and nutrition to millions of small and marginal farmers, especially women in rural areas. By promoting contract farming, farmer producer organizations (FPOs), and skill development programs, the sector can become a powerful engine for inclusive rural development.

7. **Government Support and Policy Initiatives**

The Government of India and state governments are supporting the poultry sector through various schemes, including the National Livestock Mission (NLM), subsidies for backyard poultry, and incentives for modern abattoirs and cold chain infrastructure. Policies that allow 100% FDI in food processing, income tax benefits for cold storage and food parks, and credit support through NABARD are also encouraging private investment in the sector. Continued policy focus on feed self-reliance, disease control, and market linkages will be crucial for sustainable growth.

Conclusion

The poultry sector in India stands at a critical juncture, where persistent challenges must be addressed to unlock its vast opportunities. To ensure long-term sustainability, the industry needs a multi-pronged strategy: strengthening biosecurity and disease surveillance, stabilizing feed prices through domestic production and strategic imports, and investing in cold chain and processing infrastructure. With rising protein demand, supportive government policies, and rapid technological change, the poultry industry has the potential to become a cornerstone of India's food and agricultural economy in the coming decade. By balancing productivity with sustainability, the sector can ensure affordable nutrition for consumers, fair incomes for farmers, and a cleaner environment for future generations.

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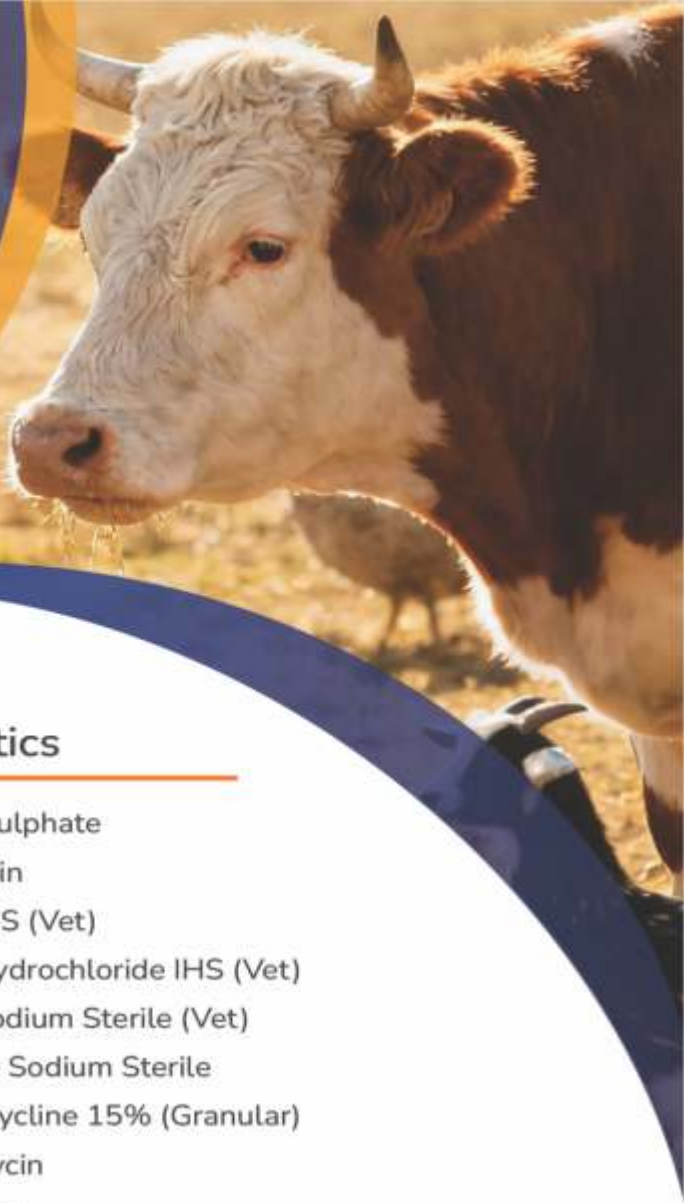

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Vitamin AD3 1000/200 (Feed Grade)
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Vitamin B1 Mono
Vitamin B12 1% (Feed Grade)
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Tylosin Phosphate Premix 10% (Granular)
Tylosin Tartrate (Vet)
Tylvalosin Tartrate IHS (Vet)

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Azithromycin
Ceftiofur IHS (Vet)
Ceftiofur Hydrochloride IHS (Vet)
Ceftiofur Sodium Sterile (Vet)
Ceftriaxone Sodium Sterile
Chlortetracycline 15% (Granular)
Clarithromycin
Levofloxacin
Lincomycin HCL
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A Multi-Mechanistic System to control A to Z toxins

(Aflatoxin to Zearalenone)

Authors: Dr. C. S. Bedi, Dr. Himali Kishor Gotarane, Dr. Nithin Reddy, Dr. Arun Kumar

Guybro Animal Health Pvt. Ltd.

Mycotoxins continue to impose a significant biological and economic burden on livestock systems, compromising gut integrity, organ function and productive efficiency even at subclinical levels. Modern feed matrices frequently harbour multiple mycotoxins simultaneously, making single-mode detoxifiers insufficient. **Turbosil++** addresses this challenge with scientifically engineered, multi-mechanistic platform that integrates **Adsorption, Biotransformation** and **Bioprotection** to deliver broad-spectrum defence against mycotoxins, endotoxins and chemical residues.

At the core of its functionality is an advanced **Adsorption** mechanism. **Turbosil++** possesses highly active surface structure with precise pore dimensions and optimal charge distribution, enabling rapid and selective interaction with wide array of polar and non-polar mycotoxins. Its dipolar binding capability and enhanced cation exchange characteristics facilitate the formation of stable, irreversible toxin–binder complexes within the gastrointestinal tract. These complexes are biologically inert and non-absorbable, ensuring the toxins remain confined to the digestive lumen and are efficiently eliminated from the body. This mechanism significantly reduces toxin bioavailability without interfering with the absorption of vitamins, minerals or other essential nutrients—a critical parameter for maintaining productive efficiency.

Complementing adsorption, **Turbosil++** introduces a powerful **Biotransformation mechanism.** Through targeted enzymatic activity, the product modifies the chemical structure of absorbed mycotoxins, converting them into non-toxic or significantly less harmful metabolites. This irreversible detoxification step prevents secondary interactions of toxins with epithelial cells, immune cells and metabolic tissues. By altering toxin functionality at the molecular level, **Turbosil++** helps prevent cellular damage, oxidative stress and inflammatory cascades typically associated with chronic mycotoxin exposure. This mechanism provides a deeper biological safeguard beyond mere toxin binding, ensuring systemic protection.

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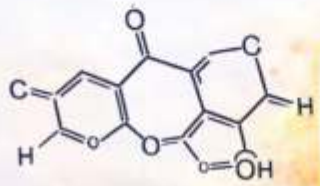
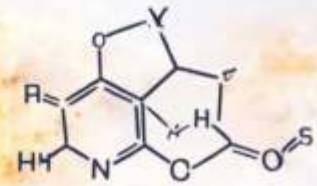
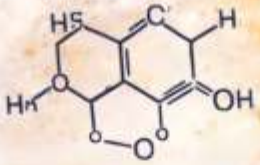


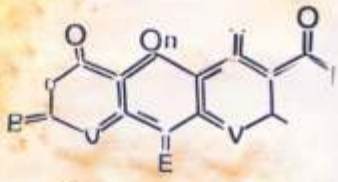
Aflatoxins



T2 Toxin



Zearalenone



DON (Deoxynivalenol)

Controls A to Z Toxins

(Aflatoxin to Zearalenone)

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The other mechanism, **Bioprotection,** strengthens host physiology to counteract the downstream effects of toxin challenge. **Turbosil++** supports mucosal integrity, enhances immune responsiveness and assists in maintaining optimal liver tissue function—an essential factor given the liver's central role in toxin metabolism and clearance. Its antioxidative properties mitigate the generation of reactive oxygen species induced by mycotoxin insult, thereby protecting cell membranes, enzymes and metabolic pathways from oxidative degradation. This tri-layer defence system improves gut environment stability, supports microbiota balance, enhances nutrient utilisation and ultimately promotes superior growth performance and feed conversion efficiency.

Extensive in vitro and in vivo evaluations validate **Turbosil++** as a highly specific, safe and consistent mycotoxin management tool. Its stability across varying pH conditions and resilience during pelleting and extrusion processes ensure reliable efficacy in diverse feed manufacturing systems. Additionally, its anti-caking characteristics improve feed handling and storage quality. The product has demonstrated measurable benefits in improving protein and fibre digestibility, enhancing reproductive and hepatic health, increasing egg production and reducing the systemic impacts of multi-toxin exposure.

In a production environment where mycotoxin co-contamination is increasingly the norm, **Turbosil++ provides a scientifically robust, multi-dimensional solution** that surpasses traditional toxin binders. By integrating three distinct modes of action—adsorption, enzymatic detoxification and physiological protection—it establishes a comprehensive shield that preserves gut integrity, protects vital organs and enhances animal performance. As a next-generation tool for toxin mitigation, **Turbosil++** stands as a critical component in achieving feed safety, biological resilience and production efficiency in modern livestock systems.

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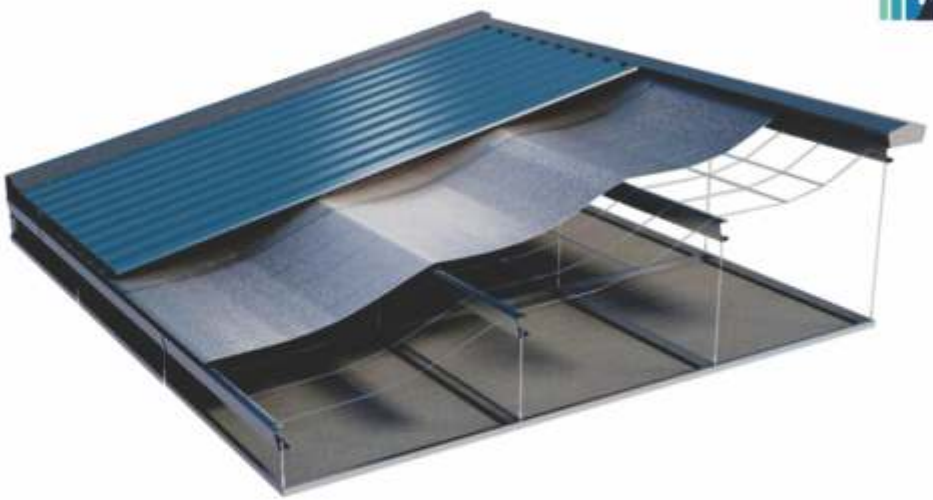

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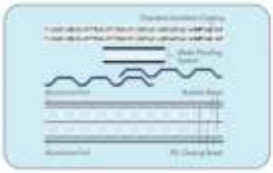

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Gratitude & Highlights: Huvepharma at Poultry India 2025

The curtains have closed on the Poultry India Exhibition 2025, and we are energized by the incredible momentum generated over these dynamic days. Our participation was a resounding success, defined by meaningful connections and a shared vision for the future of the industry.

We extend our deepest gratitude to the remarkable community of professionals, partners, and pioneers who visited our stall. Your presence, curiosity, and collaborative spirit were the driving force behind the vibrant atmosphere and insightful exchanges we witnessed.

To every delegate who engaged with our team: thank you. The discussions we shared went beyond the conventional—they were strategic dialogues filled with valuable perspectives and a mutual passion for innovation and excellence in poultry health and nutrition.

The team of Huvepharma wishes to express our heartfelt thanks for your partnership, which is the cornerstone of our progress. The connections made and strengthened at this year's exhibition are invaluable, and we are thrilled by the opportunities they present.

As we move forward, we carry with us the inspiration and insights gathered. We are more committed than ever to supporting your goals with advanced solutions and unwavering partnership.

Thank you for making Poultry India 2025 a landmark event. We look forward to building on this momentum together.

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

Opportunities and Challenges in Poultry

By

Prof. Dr. ARM Ziaul Hasan

Senior Consultant
Industrial Agricultural & Livestock
Production & Management Specialist

Abstract

The global poultry industry is entering a decisive decade defined by rising protein demand, climate instability, disease pressure, antimicrobial resistance, technological disruption, and changing consumer expectations. Poultry remains the world's most affordable and scalable source of animal protein, yet its future depends on disciplined management, technological adoption, and structural reform.

This article presents a strategic, experience-based analysis of the major opportunities driving poultry growth alongside the biological, economic, environmental, and managerial challenges threatening long-term sustainability. Drawing on global production data, emerging technologies, and over 25 years of hands-on poultry farming experience, this review provides practical guidance for farmers, integrators, policymakers, and industry stakeholders navigating the next phase of poultry development.

Introduction: Poultry and Global Food Security

Poultry is the fastest-growing livestock sector worldwide and the backbone of affordable animal protein. Global production exceeds **130 million tonnes of poultry meat and 1.5 trillion eggs annually,** supporting billions of consumers across income levels.
Compared with ruminant livestock, poultry offers:

- Superior feed conversion efficiency,
- Shorter production cycles,
- Lower land and water requirements,
- Reduced greenhouse gas emissions per kilogram of product,
- Rapid adaptability to market and climatic change.

These advantages explain why poultry is expected to contribute **nearly half of all additional global meat consumption by 2030**.

However, efficiency has come at a cost. Intensification has amplified systemic risks — disease outbreaks, feed volatility, climate stress, antimicrobial resistance, and environmental pressure. The future of poultry depends not on expansion alone, but on **Professionalization, discipline, and data-driven decision-making.**

Global poultry industry overview

1 Rising Demand and Market Expansion

Population growth, urbanization, and dietary shifts toward white meat continue to fuel poultry consumption. Poultry's affordability and cultural acceptability give it a structural advantage over red meat.

Asia and Africa represent the strongest growth regions due to:

- Expanding middle-income populations,
- Urban lifestyle changes,
- Increasing demand for processed poultry products,
- Improving cold-chain infrastructure.

2 Integration and Consolidation

Large integrators increasingly control breeding, feed, farming, processing, and marketing. While integration improves efficiency and biosecurity, it marginalizes unorganized smallholders who lack capital, bargaining power, and risk buffers.

The reality is simple: isolated farms fail; integrated systems survive.

3 Technology Transition

The industry is shifting toward climate-controlled housing, automation, precision feeding, and sensor-based monitoring. These systems reduce human

error but demand technical skill, capital investment, and energy reliability.

Major opportunities in the poultry sector

1 Rising Global Protein Demand

Broilers reach market weight within 35–42 days, allowing rapid response to demand fluctuations. No other livestock species offers comparable scalability.

2 Feed Efficiency and Genetic Gains

Modern broilers achieve **1.4–1.6 FCR**, while layers require **2.0–2.2 kg feed per dozen eggs**. Genetic progress continues to deliver faster growth, higher yields, and improved persistence.

3 Value Addition and Processing

Profitability increasingly lies beyond live bird sales. Value-added products — cut-up parts, marinated meat, nuggets, sausages, and hygienically packed eggs — multiply margins and enable export access.

4 Specialty and Premium Markets

Rapidly growing segments include:

- Antibiotic-free poultry,
- Organic and free-range systems,
- Omega-3 and micronutrient-enriched eggs,
- Halal-certified poultry for global markets,
- Indigenous and slow-growing breeds for niche consumers.

5 Renewable Energy Integration

Solar-powered poultry houses, biogas systems, and energy-

efficient ventilation reduce operating costs and carbon footprint while improving resilience against rising energy prices.

Major challenges limiting poultry growth

1 Disease Pressure: The Primary Threat

Disease remains the single largest risk in poultry production. Major threats include:

- Avian Influenza,
- Newcastle Disease,
- Infectious Bronchitis,
- Infectious Bursal Disease,
- Salmonella, E. coli, Mycoplasma, and coccidiosis.

Most outbreaks are not accidents — they are management failures caused by weak biosecurity, poor ventilation, inconsistent vaccination, and human negligence.

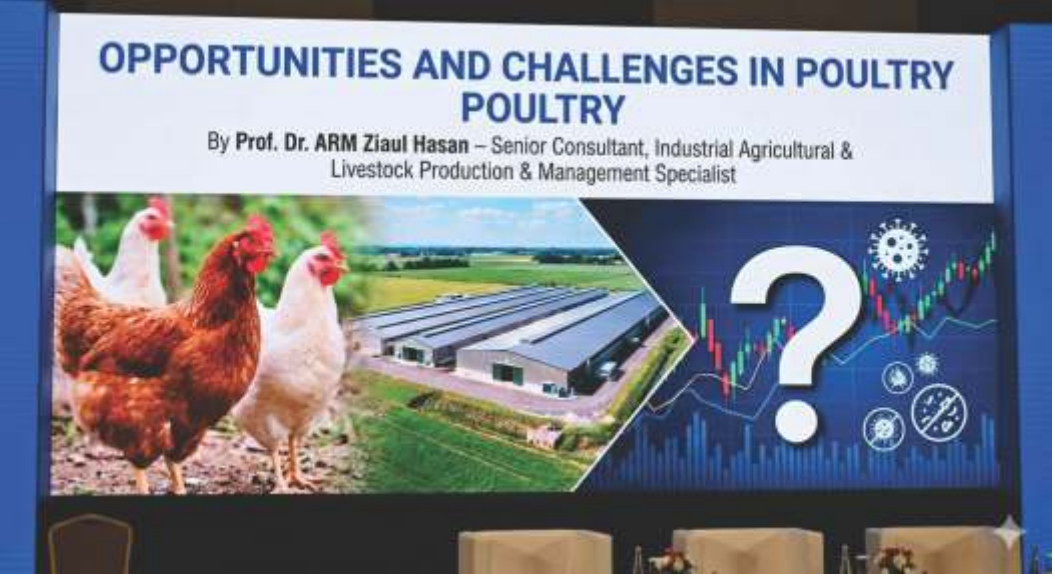
2 Feed Cost Volatility

Feed accounts for **60–72% of production costs**. Dependence on imported maize and soybean meal exposes producers to climate shocks, geopolitical tension, and currency fluctuation. Without diversification into alternative protein sources such as insect meal, microbial protein, DDGS, or oilseed cakes, profitability remains fragile.

3 Climate Stress and Housing Failures

Even minor temperature deviations reduce feed intake, growth, egg production, and immunity. Heat stress is worsening due to climate change, unreliable power supply, and outdated housing designs.

Ventilation errors alone account for a significant proportion of



respiratory disease outbreaks — a preventable failure.

4 Antimicrobial Resistance (AMR)

Global pressure to reduce antibiotics is irreversible. Producers who rely on antibiotics to compensate for poor management will lose market access. Transitioning to gut-health-based systems is no longer optional.

5 Biosecurity Gaps

Most farms claim biosecurity; few practice it consistently. Biosecurity must be a culture, not a checklist. One weak link can infect an entire region.

6 Market Instability

Poultry prices are highly volatile, influenced by feed costs, disease scares, fuel prices, and political disruption. Small farmers without contracts, storage, or diversification are the most vulnerable.

Technology and future opportunities

1 Precision Poultry Farming

Sensor-based systems enable real-time monitoring of temperature, humidity, ammonia, feed intake, and weight gain. These tools reduce guesswork and stabilize performance.

2 Automation and AI

Automation addresses labor shortages and improves consistency. AI-driven analytics predict disease, optimize feeding, and reduce mortality by identifying problems before they escalate.

3 Traceability and Blockchain

Export markets increasingly demand proof of origin, feed history, vaccination, and antibiotic usage. Digital traceability systems will determine market access.

4 Feed and Nutrition Innovation

Enzyme technology, alternative protein sources, and precision nutrition models reduce dependency on expensive ingredients while improving digestibility and FCR.

Policy, investment, and workforce realities

Weak policy enforcement, poor feed regulation, limited financing, and unskilled labor undermine competitiveness. Without:

- Strict biosecurity enforcement,
- National feed strategies
- Modern processing infrastructure,
- Structured workforce training,

Poultry sectors remain vulnerable and uncompetitive.

Personal insights from poultry farming experience

Over 25 years of practical poultry farming taught me one consistent lesson: **management discipline determines success more than technology alone**.

Key observations:

- Nutrition and water quality directly shape performance.
- Subtle behavior changes signal health issues early.
- Biosecurity works only when practiced daily, without exception.
- Environmental control — ventilation, litter, temperature — delivers outsized returns.

Biosecurity is not expensive; disease is.

Conclusion

The poultry industry stands at a clear crossroads. The old, low-cost, manual model is no longer viable. Climate change, disease pressure, antimicrobial regulation, and consumer scrutiny are reshaping the sector permanently.

The future belongs to producers who:

- Adopt technology early,
- Enforce strict biosecurity,
- Diversify feed resources,
- Reduce antibiotic dependence,
- Invest in processing and traceability,
- Professionalize management at every level.

Those who resist change will not be protected by tradition or scale. They will be replaced by disciplined, data-driven systems that understand poultry not as a gamble — but as a controlled biological enterprise.

Personal Thought to Share

"In poultry farming, every small action-clean water, a disinfected feeder, an attentive eye-can determine the survival, productivity, and profitability of the flock. The birds reward care, diligence, and foresight; they respond to neglect with losses that are always preventable."

Colossal and Impactful Participation of Indian Herbs Specialities at 17th Poultry India, Hitex Exhibition Centre, Hyderabad | 26–28 November, 2025

Advancing Phytogenic Innovations

INDIAN HERBS, a pioneer and global market leader in Herbal Animal Health Care Products since 1951, proudly participated in 17th Edition of Poultry India Show 2025, held at Hitex, Hyderabad from 26th to 28th November 2025. The event emerged as a colossal and magnificent platform, bringing together poultry integrators, feed millers, veterinarians, academicians, consultants, nutritionists, researchers and global industry stakeholders shaping the future of poultry production.

INDIAN HERBS stall witnessed overwhelming participation and engagement from customers, global partners, consultants, nutritionists, and poultry professionals. Our experienced technical and marketing team extended a warm welcome to all visitors, fostering meaningful technical discussions and knowledge exchange. The enthusiasm and leadership of our team made our participation highly impactful and memorable.

Advancing Phytogenic Science Through Innovation

As the pioneer of Veterinary Ayurveda, **INDIAN HERBS** continues to innovate with a strong scientific foundation to deliver next-generation phytogenic feed supplements and animal healthcare solutions. With our guiding philosophy of "Traditional Glory and Modern Science," we are committed to transforming herbalism into a dynamic, evidence-based, and globally validated science.

At Poultry India 2025, we showcased our latest advancements in phytogenic technologies, emphasizing: advanced phyto-bioactives with precision-designed formulations, mechanistic research and mode-of-action validation & extensive Indian and international scientific trials. Our phytogenic solutions are designed to enhance gut integrity, improve feed efficiency, strengthen immunity, mitigate AMR challenges, control pathogens and optimize performance in modern poultry production systems.

Key Technical Highlights

INDIAN HERBS showcased data from extensive Indian and international validation trials, reinforcing the safety, efficacy and consistency of its phytogenic feed supplement portfolio. The company's solutions are characterized by synergistic combinations of plant-derived bioactive compounds, offering measurable performance benefits while remaining residue-free and environmentally responsible.

The company's portfolio includes over 230 herbal formulations for poultry, ruminants, swine, equine, aquaculture and companion animals, supported by robust research, quality assurance and regulatory compliance systems.

Commitment to Quality, Research and Sustainability

INDIAN HERBS operates state-of-the-art R&D and quality control facilities, approved by the Ministry of Science and Technology, Government of India, with a

strong focus on herbal standardization, phyto-analytical profiling and mechanism-of-action research. All products are developed to meet international quality benchmarks and are natural, withdrawal-free and suitable for antibiotic-free meat and egg production.

Global Reach and Industry Leadership

INDIAN HERBS successfully markets its products in more than 50 countries across Europe, Latin America, Asia, MEA and is the first herbal animal health company recognized by the Export Inspection Council of India. With over 75 years of pioneering excellence, we remain committed to supporting the global animal healthcare industry with sustainable, cost-effective and scientifically validated phytogenic solutions.

Way Forward

We express our heartfelt gratitude to all our customers, collaborators, integrators, consultants, researchers, veterinarians, global partners and poultry professionals who visited our stall. Your trust, encouragement and technical engagement inspire us to innovate further and contribute meaningfully to the future of poultry production. With a reaffirmed vision toward sustainability, feed-to-food safety and global well-being, **INDIAN HERBS** remains committed to fostering animal health through nature's bliss backed by modern science.

"Transforming India's Food Landscape: The Pivotal Role of NARS"

Ambika Paul[1], Monika Karnani[2], Manju[3]

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Introduction

The Indian NARS is one of the largest systems in the world. The effective functioning of this system in close association with education and extension systems has greatly contributed to the rapid growth of agriculture after independence.

I. Vision

To create a globally competitive, farmer-centric, innovation-driven agricultural research ecosystem that ensures food, nutrition, environmental sustainability, and rural prosperity through cutting-edge science and efficient knowledge delivery systems.

II. Objectives

a) Research & Technology Development-

- It emphasize utilization of plant genetic resources to produce efficient, productive and stable genotypes of crops, especially hybrids
- It generates knowledge related to the processes of production and productivity of agricultural crops leading to development of technologies.
- It pays greater attention to agriculture under unfavorable conditions and concentrate on new and emerging technologies such as biotechnology

b) Education & Human Resource Development-

- It includes providing post-graduate education and human resources development in agricultural science to build national capacity.
- It includes strengthening curriculam in physical, biological and social sciences, frontier areas such as biotechnology, IT, environmental science, agro-biodiversity, post-harvest technology.
- It aims to enable post-doctoral research, continuing education, faculty upgradation especially through international collaboration.

c) Extension, Technology Transfer & Outreach-

- It mandates national leadership in agricultural research, education, extension and technology assessment and transfer by developing new concepts.
- It generates innovative extension models & disseminate them through

regional stations, universities and state extension systems.

- It promote client oriented on farm research and technology assessment, refinement and transfer through participatory approaches and Institute-Village Linkage Programme.
- Strengthening communication, information dissemination, and rural-development linkages ensures that research outputs become usable technologies and practices at farm-level.
- Support for Strategic and Frontier Research & Policy-Relevant Science

d) Coordination, National Leadership & Information Management-

- It maintain reference libraries/information systems, and disseminate findings through an extensive information network.
- It provide consultancy services in fields of education, research, training, and dissemination — facilitating technology transfer and decision-support for stakeholders including policymakers, agribusinesses, extension agencies.

iii. Organizational structure

In most countries the national Ministry of Agriculture provides overall policy direction,budgetary authority and oversight for the national system. The apex research council (ICAR) acts as the central coordinating body for agricultural research, education and extension, providing national leadership, setting research priorities, and functioning as a clearing-house for information and policy inputs.

Specialized national institutes focused on crops, horticulture, animals, fisheries, natural resources, and socio-economics make up the scientific core of NARS. They undertake basic, strategic and adaptive research and often host national mandates (e.g., All-India Coordinated Research Projects). India's network includes over 100 ICAR institutes and directorates spread nationally to managenationalcoordinatedprojectsandnetworks.State Agricultural Universities (SAUs), Central Agricultural Universities, Deemed Universities provide undergraduate and postgraduate education, lead on location-specific research and serve as regional hubs for technology testing and farmer training.

KVKs (farm science centres) are the primary field-level linkage between research and farmers: testing, validating and demonstrating technologies, training farmers and extension personnel, and providing feedback to research organizations. State government extension departments collaborate with SAUs and KVKs to deliver advisory services and extension programs.Regional nodes provide technology promotion, training and linkages between national research and state-level systems. ICAR uses ATARI (or similar regional centres) to coordinate outreach in multi-state regions. Dedicated national funds support basic and strategic research,and targeted programs to address anticipated problems (e.g., National Agricultural Science Fund). These instruments steer long-term scientific priorities in NARS. Institutions(e.g., NAARM) for training, managerial capacity building, governance reforms, and policy research supports NARS performance and institutional strengthening.

NARS interacts with CGIAR centres, private industry (seed, biotech, ag-tech), NGOs and farmer organisations for research collaboration, technology scaling and public-private partnerships. Such linkages broaden resources, expertise and scaling potential.

IV. Achievements of nars

Since the early decades of post-independence research expansion under NARS/ICAR, India has seen dramatic growth; foodgrain output, horticulture, fish, milk and egg production increased manyfold over decades. This transformation helped India achieve self-reliance in staple foods, improved nutrition and food security at a national scale-

- NARS released ~ 152 biofortified varieties (including rice, wheat, maize, millets, pulses, oilseeds) contributing to nutritional security.
- 20,100 tonnes of quality seeds of improved varieties (cereals, pulses, oilseeds, vegetables, fruits, fibre, etc.)

produced and supplied to farmers.

- Extension activities by KVKs reached 1.837 million (183.66 lakh) farmers/other end-users raising awareness and uptake of improved agricultural technologies.
- ICAR made accessible 2,000 journals across 123 libraries, facilitating research and knowledge dissemination across the country.
- ICAR conducted studies at national scale to assess and reduce post-harvest losses (grain storage, pulses etc.), leading to protocols for safer storage, strengthening food-supply chain resilience.
- By development of stress-tolerant and climate-resilient crop varieties, NARS has strengthened India's capacity to deal with climate variability, resource limitation, and environmental stresses securing long-term food security.
- By supporting research institutes, germplasm conservation (e.g. genetic stock preservation), NARS ensures genetic diversity and sustainability of breeding resources.

V. Conclusion

The structure and organization of NARS are critical factors, which should change in response to emerging technical needs, changing socio-economic scenario and the political environment. As future research needs will be more complex, more difficult and probably increasingly expensive, the organization and structure of NARS will have to adjust to meet future challenges. Some of the areas which NARS will have to strengthen are:

- Creation of planning capacity for increasing effective use of resources.
- De-centralization instead of over-centralization, for combining authority and accountability.
- A healthy balance of national- and regional-level research is essential for maximizing NARS impact.
- Inter-institutional coordination for building a great deal of complementarity is essential for maximizing the efficiency of NARS.
- Commitment to development for ensuring greater relevance and excellence in respect of research. This can be achieved through appropriate administrative controls. Combining autonomy with commitment is necessary for the success of NARS.
- It is necessary to ensure that management boards are made responsible for reflecting the viewpoints of user agencies or
- Clients in the research programmes of NARS organizations.
- Linkage with the private sector or agro-business is essential to ensure that the research of NARS remains relevant and to promote synergism.

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How to Do Poultry Farming in Winter?

Mr. Rakesh Kumar
Growel Agrovet Private Limited
www.growelagrovet.com

Poultry Farming in Winter: Complete Guide for Better Health and Production

Poultry farming during winter directly impacts the overall performance of birds because the surrounding temperature drops sharply. Reduced egg production, lower water intake, decreased fertility and poor hatchability are some common challenges. That is why proper poultry management during the cold season becomes extremely important for every poultry farmer.

To ensure maximum profit from poultry farming in winter, birds must be kept free from all types of stress. Harsh cold weather affects temperature, humidity, litter, ammonia levels, feed, water, light and ventilation—each of which plays a crucial role in maintaining bird health and performance.

Below are the major points poultry farmers should take special care of during winter.

Poultry House Management

A poultry house should be designed in a way that provides maximum comfort to birds during cold months. The structure should be built considering wind direction and sunlight exposure. In winter, since the sun travels lower in the sky, building the shed in an east-west direction ensures more sunlight enters the house throughout the day.

Gunny bags or curtains should be hung at places where cold air enters. These should be rolled down after sunset and kept until the next morning to protect the birds from cold winds.

Proper brooding becomes even more important in winter. Although the brooding method remains the same, achieving the correct temperature and humidity requires more fuel, time and effort during low temperatures.

Poultry House Ventilation Management

Birds release a lot of moisture through their breath and droppings. Poor ventilation can cause ammonia buildup, resulting in respiratory issues. Therefore, fresh air movement inside the shed is essential.

Sliding windows allow airflow during the day and can be closed at night. Exhaust fans also help remove stale, humid air.

The first 24–48 hours of a chick's life are critical. Cold air entering the shed becomes heavy and falls directly onto the litter instead of mixing with warm air. This causes early litter spoilage, so ventilation and heating must be adjusted frequently—sometimes even hourly.

Cold-weather ventilation is difficult, but the following steps help maintain proper conditions:

Key Winter Ventilation Tips

- Ensure proper insulation and sealing of the shed.
- Run fans at minimum capacity to retain heat, but do not stop minimum ventilation.
- Increase ventilation if ammonia smell or wet litter appears.
- If more ventilation is required, add heat to incoming air rather than reducing fan speed.
- Reduce ventilation if litter becomes overly dry.
- Use circulation fans to mix cold and warm air before it reaches birds.

Light Management for Layers

During winter, natural daylight hours reduce, causing birds to enter moulting and stop laying. To avoid production loss, layers should receive 14–16 hours of artificial light daily.

Poultry Litter Management

Before placing chicks, the floor should be covered with good-quality bedding material (litter). Litter helps maintain uniform temperature, absorbs moisture and prevents direct contact between birds and manure.

A litter depth of **6 inches** is ideal for winter. Properly managed litter should feel warm when held in hand.

Wet litter quickly becomes a problem because of leaking pipes, overflowing drinkers, roof drips, and watery droppings. Wet litter forms caked patches, creating an ideal environment for anaerobic bacteria and ammonia gas.

Important Points for Litter Quality

- Maintain litter moisture between 25–35%.
- Monitor heating and ventilation continuously.
- Use feed and water of good quality to prevent watery droppings.
- Replace caked litter immediately.
- Keep the litter dry to avoid bad odour, especially on farms located near residential areas.

A dry, low-pH litter naturally slows down organic matter degradation and prevents foul smell.

Poultry Feeding Management

Poultry uses feed for two major functions:

1. Maintaining body temperature and basic physiological activity
2. Building body tissues—meat, bones, feathers, eggs, etc.

In winter, birds eat more feed because low temperatures increase energy requirement. Thus, high-energy diets become necessary.

Energy Requirement in Winter

When birds consume more feed for energy, they also intake extra nutrients unnecessarily, causing wastage. To avoid this, include higher-energy sources such as oil or fat in the diet while adjusting other nutrients accordingly.

During the first 24–48 hours, chicks must eat and drink quickly. Farmers should spread feed on paper sheets and provide additional small drinkers to make it easier for chicks.

Randomly check chicks to ensure the crop is full, soft and round—an indication that they are eating and drinking properly.

Ideal Feed Formula

- Summer requirement: **23% protein, 3100 Kcal ME/kg**
- Winter requirement: **23% protein, 3400 Kcal ME/kg**

Increasing amino acid levels improves FCR, growth rate and breast meat yield. However, high protein also increases water consumption, which may wet the litter. Products like **Amino Power** help maintain amino acid balance during the first 20 days. Feed with higher caloric value helps birds stay warm throughout the cold weather.

Poultry Water Management

During winter, birds naturally consume less water, but maintaining hydration is essential.

Water should always be **fresh, clean and sanitised** with products like Aquacure. If water is too cold, mix warm water to bring it to a moderate temperature.

In freezing regions, pipes often get blocked due to ice formation. When temperatures drop below 0°C, inspect water lines regularly to prevent blockage.

Since birds drink less water in winter, many medicines, vaccines and anti-stress supplements such as Growvit Power, Immune Booster, etc., are given through water. Remove water for a short period before water medication and prepare smaller quantities so birds consume the full dose.

Final Tips for Successful Poultry Farming in Winter

With proper knowledge, correct precautions and the use of high-quality poultry healthcare products, winter poultry farming becomes easy and profitable. Following the above management practices will help you maintain bird health, reduce stress and improve overall production during the cold months.

For a nation that aspires to lead the world, a protein-deficient population is a challenge we can no longer ignore.

HELLO PROTEIN is a public awareness nationwide initiative movement born for this urgency. Our mission is simple yet transformative: to reshape India's relationship with protein and to strengthen the industry perspective towards protein awareness.

HELLO PROTEIN purpose is not to preach, but to educate, to simplify complex science, debunk long-held myths, & empower individuals with practical, everyday guidance.

Become an advocate for better nutrition; make protein a priority – not occasionally, but consciously, consistently, and proudly.

Let's join hands & make our nation protein deficit free with **HELLO PROTEIN**.

If this mission resonates with you, do drop your ideas/comments/suggestions at : **helloproteins25@gmail.com**

Mr. O. P. Singh
Founder

How Small Farmers can Benefit from Intellectual Property Rights in Animal Husbandry

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Abstract

This paper explores how intellectual property rights (IPRs) can empower small farmers in animal husbandry. It examines patents, geographical indications (GI), trademarks, and sui generis protections as mechanisms for safeguarding indigenous breeds, enhancing market access, and recognizing traditional knowledge. Drawing on case studies from India and Africa, the paper demonstrates how IPRs can generate economic, social, and environmental benefits. Challenges such as awareness gaps, legal complexity, and inequity are discussed, with policy recommendations for capacity building, cooperative ownership, and international collaboration.

Introduction

Animal husbandry is a vital component of rural economies, particularly in developing countries. Small farmers often act as custodians of indigenous breeds and traditional practices, yet globalization and commercialization have exposed them to risks of biopiracy and exploitation (Gupta, 2020). Intellectual property rights (IPRs) provide a legal framework to protect innovations and resources, ensuring that smallholders benefit from their contributions (WIPO, 2023). This paper investigates how small farmers can leverage IPRs to secure livelihoods, conserve biodiversity, and participate in global agricultural innovation systems.

Discussion

Forms of IPRs in Animal Husbandry

- Patents: Protect breeding innovations, though often inaccessible to small farmers due to cost and complexity.
- Geographical Indications (GI): Provide collective protection for breeds tied to specific regions (e.g., Gir cattle, Malabari goats).
- Trademarks: Enable cooperatives to brand products, increasing consumer trust.
- Sui generis systems: Offer tailored protection for indigenous genetic resources.

Benefits for Small Farmers

- Breed Protection: Prevents misappropriation of indigenous breeds.
- Economic Gains: Licensing and branding generate income.
- Market Access: GI and trademarks enhance product value.
- Recognition: Legal frameworks validate traditional knowledge.
- Sustainability: Incentives encourage biodiversity conservation.

Case Studies

India: Gir Cattle and Malabari Goats

The Gir cattle breed, registered under GI laws, has seen increased demand for milk products. Farmers report a 20–30% rise in income due to premium branding (Kumar & Singh, 2021). Similarly, Malabari

goat milk has been marketed as premium, enhancing rural incomes and encouraging breed conservation.

Africa: Indigenous Poultry Breeds

Community-based IPR initiatives in Africa have documented and protected indigenous poultry breeds. In Uganda, farmer cooperatives using trademarks for indigenous chicken products reported a 25% increase in market prices (FAO, 2022). This not only improved livelihoods but also incentivized conservation of rare breeds.

Brazil: Zebu Cattle

Brazil's recognition of Zebu cattle through GI frameworks has allowed small farmers to export premium beef products. Studies show that GI branding increased export revenues by 15% while preserving genetic diversity (FAO, 2022).

Challenges

- Awareness Gap: Limited knowledge of IPRs among rural farmers (Gupta, 2020).
- Legal Complexity: Filing patents or GI applications requires technical expertise (Kumar & Singh, 2021).
- Equity Issues: Corporations often dominate IPR systems.
- Implementation Barriers: Weak enforcement reduces effectiveness (FAO, 2022).

Policy Recommendations

1. Capacity Building: Training programs to educate farmers about IPRs.
2. Government Support: Subsidized legal aid for filing patents and GI registrations.
3. Community-Based Models: Cooperatives can collectively own and manage IPRs.
4. Integration with Biodiversity Laws: Ensure farmers' rights under national biodiversity acts.
5. International Collaboration: Strengthen TRIPS and CBD frameworks to protect indigenous breeds globally (WIPO, 2023).

Conclusion

Intellectual property rights in animal husbandry offer small farmers pathways to economic empowerment, recognition, and biodiversity conservation. Case studies from India, Africa, and Brazil demonstrate that IPRs can increase incomes by 20–30%, enhance market access, and incentivize conservation. While challenges remain, supportive policies and community-based approaches can ensure that IPRs serve as tools of inclusion rather than exclusion. Protecting indigenous breeds and traditional knowledge enables small farmers to secure sustainable livelihoods in the face of globalization.

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Recent Antibacterials in Poultry: Current Developments, Efficacy, And Future Prospects

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Regulatory Trends Affecting Antibacterial Use (India & Global Context)

India has implemented a major regulatory shift to control antimicrobial misuse in poultry production. The Food Safety and Standards Authority of India (FSSAI) has banned the use of antibiotics at any stage of production in poultry, eggs, and meat from April 1, 2025. This ban includes critical antibiotics such as carbadox, chloramphenicol, colistin, streptomycin, and nitroimidazoles. The policy aims to reduce antimicrobial residues in food and limit the emergence of antimicrobial resistance (AMR). Globally, similar trends are evident, with antibiotic growth promoters being discouraged or banned and therapeutic use restricted under veterinary supervision.

Conventional Antibiotic Classes Still Relevant for Therapeutic Use

Although routine and prophylactic use is being phased out, certain antibiotics remain clinically relevant for treating bacterial diseases in poultry under strict veterinary oversight and withdrawal compliance.

Emerging Alternatives with Antibacterial Activity

To reduce dependency on conventional antibiotics, several alternative strategies with antibacterial or microbiota-modulating effects are being developed.

1. Plant-Derived and Natural Compounds

Plant-based antibacterials are gaining importance due to their safety profile and multi-target activity.

- Essential oils such as carvacrol and thymol exhibit antibacterial, antioxidant, and immunomodulatory properties and are being optimized using nano-delivery systems.
- Herbal extracts including garlic, cinnamon, and thyme

Table 1. Conventional Antibiotics Historically Used in Poultry

Antibiotic Class	Examples	Major Indications	Current Regulatory Status
β-lactams	Amoxicillin, Penicillin	Broad-spectrum bacterial infections	Restricted to therapeutic use only
Tetracyclines	Doxycycline	Respiratory and systemic infections	Increasingly regulated due to resistance
Fluoroquinolones	Enrofloxacin	Broad-spectrum, Gram-negative infections	High resistance concern, restricted use
Aminoglycosides	Gentamicin	Severe Gram-negative infections	Limited therapeutic application
Polypeptides / Ionophores	Bacitracin, Salinomycin	Necrotic enteritis, growth promotion	Growth-promoter use banned or restricted

Key Point: *Many of these drugs are no longer approved for prophylactic or growth-promoting purposes and are permitted only for therapeutic use with defined withdrawal periods.*

improve gut health and suppress pathogenic bacteria while supporting beneficial microbiota.

2. Functional Feed Additives

These compounds improve gut ecology and indirectly reduce pathogen load.

- Organic acids and short-chain fatty acids, such as butyric acid, lower gut pH and strengthen intestinal barrier integrity.
- Prebiotics and probiotics modulate gut microbiota, enhance immune responses, and reduce colonization by pathogenic bacteria.
- Bacteriocins, which are ribosomally synthesized antimicrobial peptides, provide targeted antibacterial activity without disturbing commensal flora.

3. Biological Agents

Advanced biological approaches offer precision antibacterial control.

- Bacteriophages selectively target specific bacterial pathogens and are considered promising precision antibacterials with minimal ecological disruption.
- Antimicrobial peptides (AMPs), including engineered peptides such as cLFchimera and apidaecin analogs, show strong antibacterial activity and potential as growth promoter replacements.

Why This Matters Now?

Antimicrobial resistance (AMR) has emerged as one of the most serious global threats to animal and public health, and poultry production systems play a significant role in this challenge. Intensive poultry farming, characterized by high stocking densities and rapid production cycles, creates conditions that favor the emergence and spread of resistant bacterial strains. Recent studies have reported the presence of antimicrobial resistance genes not only in poultry pathogens but also in commensal bacteria isolated from poultry litter, farm dust, soil, and nearby water bodies. This environmental dissemination highlights the broader ecological impact of indiscriminate antibiotic use beyond the farm itself.

The detection of resistance genes in the poultry production environment raises concerns about their potential transfer to human pathogens through direct contact, the food chain, or environmental routes. Such transmission pathways strengthen the One Health perspective, which recognizes the interconnectedness of animal, human, and environmental health. Consequently, regulatory authorities, consumers, and international organizations are increasingly demanding residue-free poultry products and responsible antimicrobial stewardship.

At the same time, the poultry industry must maintain flock health, productivity, and economic viability. This has intensified the search for sustainable alternatives that provide antibacterial effects, enhance gut health, and improve immune competence without exerting selective pressure for resistance. The integration of plant-derived compounds, functional feed additives, and biological agents represents a paradigm shift toward preventive and holistic health management strategies. Together, these approaches support sustainable poultry production while aligning with evolving regulatory frameworks and global efforts to combat AMR.

Conclusion

Antibacterial strategies in poultry production are evolving rapidly due to AMR concerns, consumer pressure, and global regulations. Although conventional antibiotics remain essential for therapeutic use, non-antibiotic alternatives such as essential oils, organic acids, probiotics, bacteriophages, AMPs, and vaccination have emerged as promising tools. Modern poultry production requires integrated health management combining nutritional strategies, biosecurity, vaccines, and innovative antibacterial agents. Continued research, field validation, and molecular studies will further enhance the efficiency of these approaches, ensuring sustainable poultry production with minimal antibiotic dependence.

Role of Patent tools in Promoting Veterinary Innovation

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Introduction

Patent tools are specialized methods, searches and analytical techniques used to gather, organize and interpret patent information in order to support innovation, strategic decision-making and intellectual property (IP) management. These tools help innovators and organizations understand existing patent activity, assess risks (such as infringement), identify opportunities in emerging technology areas, and make evidence-based decisions about research, development and commercialization.

Components of patent tools-

Patent tools typically include patent searches, freedom-to-operate (FTO) analyses, patent landscaping and analytics, and related IP management activities that together provide insights into technology trends, competitive landscapes and innovation gaps.

- **Patent searches** identify prior art and existing patents relevant to a new invention, providing clarity on novelty and the state of existing technology.
- **Freedom-to-operate** (FTO) searches assess whether a product or process can be developed and marketed without infringing third-party patent rights.
- **Patent landscaping and analytics** involve analyzing large sets of patent data to reveal technology trends, competitive positioning, and white-space opportunities for innovation.
- **Claim drafting and strategic protection-**Good patent drafting is an art. It translates messy lab protocols into legally sound claims that are broad enough to be valuable and narrow enough to survive scrutiny.
- **Licensing, spin-outs and partnership design-**Patents make it easier to negotiate licensing deals or to package inventions for a spin-out company. Licensing terms can be customized — non-exclusive for low-income regions, exclusive in commercial markets, or milestone-based to reduce upfront risk.

Significance of patent tools

Research in veterinary science utilizes wet-lab biology, animal behavior, digital tools and farm systems. Turning those discoveries into usable products requires money, regulatory paths and commercial partners. Patent tools create confidence for investors and companies that a development path is worth the time and expense.

Instead of locking up innovations,patents can help universities:

- Demonstrate technical novelty and commercial potential to funders.

- Shape collaborations with clear IP terms to make industry partnerships smoother.
- Protect student and faculty innovators while enabling licensing or start-ups.

Role of patent tools in veterinary innovation

a. Vaccines and therapeutics-

Platforms, adjuvants and delivery systems are often patent dense. Landscaping helps identify white spaces i.e. diseases or delivery routes that industry has overlooked while FTO checks avoid costly infringement issues as prototypes advance to trials.

b. Diagnostics and digital tools-

From lateral-flow kits to AI-driven diagnostic apps, veterinary diagnostics sit at the intersection of lab methods and software. Here, patenting requires algorithms, data pipelines and biological reagents may each need different protection strategies. Universities increasingly craft hybrid IP approaches to protect both the code and the biology.

c. Genetics and breeding technologies

Gene editing and trait-selection tools attract intense patent activity. Universities use analytics to decide which inventions to protect and which to publish thereby balancing open science pressures with the need to create clear commercialization options for breeders and industry partners.

d. On-farm practices and extension innovations

Even practical farm systems involving optimized feeding regimens, sensor networks and management algorithms can benefit from patent thinking, sometimes open licensing or shared standards deliver far more farmer impact. Patent tools help make that choice deliberately.

Challenges to overcome while using patent tools-

- **Difficulty in Patent Searching and Landscaping**
  Traditional patent landscaping methods using keywords and classifications are prone to errors and may miss relevant patents due to classification inconsistencies and variable terminologies.
- **Complex Patent Landscapes and Overlapping Rights**
  Patent thickets create overlapping rights that innovators must negotiate through, potentially impeding entry and innovation.
- **Novelty and Regulatory Challenges in Veterinary Patents**
  Patenting animal-health solutions is challenged by high species diversity, crossover with human health drugs, and the need to demonstrate safety and efficacy.
- **Data Quality, Volume and Analytical Limitations**
  Patent analytics systems are challenged by inconsistencies in databases, multicultural patent filings requiring translation, and overall data quality issues.
- **Licensing and Collaboration Barriers**
  Patents can create barriers to research and collaboration, as access to necessary patented tools or technologies may be limited by licensing costs and legal complexity.
- **Global Legal and Ethical Variations**
  Differences in how jurisdictions treat animal breed patents and ethical standards reflect the broader challenge of harmonizing global IP approaches for life science innovations.
- **Potential Innovation Slowdown ("Anticommons")**
  In crowded technological areas, innovators may avoid research paths that are legally expensive or complex, slowing innovation overall.The anticommons theory describes how overlapping exclusion rights can reduce efficient use of resources and hamper innovation.

Conclusion

Patent tools far from being dry legal exercises are dynamic engines helping veterinary science deliver real impact. From data driven landscaping to flexible licensing, universities are using them to accelerate innovation while balancing public access with commercial impact. Better vaccines, smarter diagnostics and animal health technologies reach animals and the entire population.

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Role of Traditional Knowledge in Sustainable Animal Husbandry

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Abstract

Traditional knowledge, often referred to as Indigenous Technical Knowledge (ITK), has played a crucial role in animal husbandry systems for centuries. It includes locally developed practices related to animal feeding, health care, breeding, housing, and management, based on long-term observation and experience. Several studies have highlighted that traditional animal husbandry practices are environmentally sustainable, economically viable, and socially acceptable (FAO, 2010). In recent years, growing concerns about climate change, antimicrobial resistance, and high input costs have renewed interest in traditional knowledge. Integrating traditional wisdom with modern scientific approaches can significantly enhance sustainable animal husbandry systems.

Keywords

Traditional knowledge, Indigenous Technical Knowledge, sustainable animal husbandry, ethnoveterinary practices, rural livelihood.

Introduction

Animal husbandry is a vital component of agricultural systems, particularly in developing countries like India. According to the Food and Agriculture Organization (FAO, 2019), livestock contributes significantly to food security, nutrition, and rural livelihoods. Long before the development of modern veterinary science, farmers relied on traditional knowledge to manage livestock health, nutrition, and productivity.

Traditional knowledge is developed through generations of close interaction between humans, animals, and the environment. Warren (1991) defined indigenous knowledge as a local knowledge system unique to a given culture or society, developed through experience and adapted to local conditions. Despite rapid modernization, traditional animal husbandry practices continue to be relevant because they are based on sustainability, low external inputs, and ecological balance.

Traditional Knowledge in Animal Feeding

Traditional feeding practices emphasize the use of locally available feed resources such as crop residues, grasses, tree leaves, and agro-industrial by-products. Devendra (2011) reported that indigenous feeding systems reduce feed costs and improve nutrient recycling in smallholder livestock systems. Farmers traditionally use fodder trees like neem, subabul, and banyan to supplement animal diets during fodder scarcity.

According to Singh et al. (2014), such feeding practices not only improve animal nutrition but also enhance resilience against climate variability.

Indigenous Animal Health Care Practices

Ethnoveterinary medicine is an important component of traditional animal husbandry. McCorkle (1986) emphasized the scientific importance of ethnoveterinary practices in livestock health management. Farmers use medicinal plants such as turmeric, neem, garlic, aloe vera, and asafoetida to treat wounds, digestive disorders, parasitic infections, and skin diseases.

Mathias and McCorkle (2004) highlighted that traditional remedies are cost-effective and

easily accessible to rural farmers. FAO (2012) reported that herbal treatments help reduce excessive use of antibiotics.

Breeding and Conservation of Indigenous Breeds

Traditional knowledge plays a key role in the conservation of indigenous livestock breeds. According to ICAR (2018), indigenous breeds are better adapted to local climatic conditions and require fewer inputs compared to exotic breeds. Köhler-Rollefson (2007) emphasized that traditional breeding practices contribute significantly to the conservation of animal genetic resources.

Housing and Animal Welfare Practices

Traditional animal housing systems are designed using locally available materials such as mud, bamboo, thatch, and cow dung. These structures provide thermal comfort and proper ventilation. Gaughan et al. (2010) reported that climate-adapted housing improves animal welfare and productivity.

Socio-Economic Importance

Traditional animal husbandry practices provide income, employment, and nutritional security to millions of rural households. The World Bank (2014) reported that livestock-based traditional systems play a crucial role in poverty alleviation. Women play a major role in preserving traditional knowledge related to animal care (Kumar et al., 2016).

Conclusion

Traditional knowledge plays a vital role in promoting sustainable animal husbandry by offering low-cost, eco-friendly, and locally adaptable solutions. Integrating traditional knowledge with modern veterinary science can enhance animal health, conserve biodiversity, reduce environmental impact, and strengthen rural livelihoods. Documentation, scientific validation, and policy support are essential for long-term sustainability.

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One Health Project - Strengthening the Fight Against AMR

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The discovery of various antibiotics throughout the 20th century has been pivotal in saving millions of lives from infectious diseases. However, the widespread and often inappropriate use of these drugs has exerted significant selection pressure on microbes, leading to the emergence and spread of antimicrobial resistance (AMR). Today, AMR poses a serious global public health threat, made even more challenging by its complex and multifactorial nature. This has underscored the need for integrated interventions grounded in the "One Health" approach, which emphasizes the interconnectedness of human, animal, and environmental health. Such a holistic strategy is essential for fully understanding the dynamics of AMR and implementing effective containment measures. This project started with the vision of nurture a sustainable future at the convergence of human health, animal health and the environment – embodying the One Health approach.

ADB-Zenex One Health Project

In April 2022, Zenex Animal Health (Zenex), in collaboration with Asian Development Bank (ADB) envisioned a three-year capacity building program for livestock farmers as well as veterinarians for creating AMR awareness. This project has been started with a goal to nurture a sustainable future at the convergence of human health, animal health and the environment – embodying the One Health approach and an expected outcome not only to improve antibiotic stewardship and minimize usage but to also improve biosecurity, productivity & health, and women participation in livestock farming. The project aimed to train a total of 2,300 livestock farmers as well as 580 veterinarians in India & SE countries - Nepal, Sri Lanka and Bangladesh to be trained under this project having the with the following objectives:

1. Appropriate use of antibiotics and effective alternatives to antibiotics.
2. Biosecurity and farm hygiene standards intended to promote better animal health and productivity.
3. Improved animal welfare standards and practices, over and above and with a more holistic approach than what is currently covered by the company's extension services.
4. Gender sensitization training.

Sathguru Management Consultants (SMC) has been appointed as the implementation partner of the project in March 2023. Several Indian veterinary universities along with three international universities (one each in Nepal, Bangladesh and Sri Lanka) were appointed for implementing this project, as per the blueprint indicative of geographic priority. Regional Leads for implementation and locations to gather participants to enable widespread dissemination of awareness.

Theory of Change

The theory of change proposed for the project by SMC envisions a ripple effect that extends far beyond improved antibiotic stewardship. At its core, the project aims to strengthen farm-level biosecurity, improve livestock health and productivity, and enable greater participation of women in the livestock economy—delivering benefits that span animal welfare, public health, and rural livelihoods. The ToC aligns training, curriculum, and implementation with measurable outcomes:

Table 1: Institutes/Organizations Involved for imparting trainings and target number of Farmers & Veterinarians

Country	University	Training Targets	
		Farmers	Vets
India	PV Narasimha Rao Telangana State Veterinary University (PVNRTVU), Telangana	450	100
	Anand Agricultural University (AAU), Gujarat	450	100
	Guru Angad Dev Veterinary & Animal Sciences University (GADVASU), Punjab	300	100
Sri Lanka	University of Peradeniya (UoP), Kandy, Sri Lanka	400	100
Bangladesh	Sher-e-Bangla Agricultural University (SAU), Dhaka, Bangladesh	350	90
Nepal	Agriculture and Forestry University (AFU), Bharatpur, Nepal	350	90

Table 2: Current Training Status of the project

Until July 2025, the Regional cumulatively conducted 40 trainings for farmers and veterinarians across the region and have achieved training the following number of participants.

Category of Training	Total No. of Trainings
Total Number of Training Programs Completed for Farmers and Veterinarians	40
Number of Livestock Farmers Trained	
a. India	577
b. Other Countries	915
Total Number of Farmers Trained	1,492
Total Number of Veterinarians Trained	332

Note: Out of 1,492 livestock farmers trained, 575 were female, representing 39% of the total and out of 332 veterinarians trained, 124 were female, accounting for 37% of the total.

reduced AMR risk through prudent antibiotic use and alternatives, improved farm hygiene and waste management, higher farmer productivity and profitability, and expanded opportunities for women in livestock farming. Early cohorts already report greater AMR awareness and confidence in biosecurity, signalling progress toward long-term goals. This integrated approach lays the foundation for sustainable livestock systems and healthier communities.

Training Curriculum and

Glimpses or Trainings Across Regions

Farmer's Training


Gujarat Farmer's Training in AAU


Telangana Farmer's Training in TSVU


Punjab Farmer's Training in GADVASU


Nepal Farmer's Training in AFU


Bangladesh Farmer's Training in SAU


Sri Lanka Farmer's Training in UoP

Veterinarian's Training

Gujarat Veterinarian's Training in AAU


Punjab Veterinarian's Training in GADVASU


Telangana Veterinarian's Training in TSVU


Nepal Veterinarian's Training in AFU


Bangladesh Veterinarian's Training in SAU


Sri Lanka Veterinarian's Training in UoP

Effectiveness Assessment

As a technical partner for the entire network, SMC has collaborated with the One Health Education, Advocacy, Research and Training (COHEART) at Kerala Veterinary and Animal Sciences University (KVASU) and developed the curriculum for both farmer and veterinarian trainings. The training curriculum has also been translated to multiple regional languages. The evaluation of each training is performed at the end to ascertain its effectiveness using similar evaluation sheets across all trainings.

The project is currently undergoing as per the scheduled program with minor deviations.

Key challenges identified during project execution:

Time constraint: Initially, the duration of the training was proposed to be 3 days. However, this duration of the training posed challenges across both farmers and veterinarians - farmers find it difficult to leave their animals for an extended period, and the Veterinarians require nomination from State AHD, which prefers shorter training sessions. Finally, the training duration reduced to 1-2 days.

Limited participation of women: In certain regions, especially Bangladesh, women's participation was limited due to a combination of social, cultural and structural barriers, thus making it difficult to achieve a female ratio in farmers' training. To mitigate the challenge, different strategies were adapted to ensure women participate in the trainings which include allowing 2 women from the families or allowing interested women to nominate another female participant from their social network to participate in the trainings. Currently Bangladesh has completed the trainings in the region and has achieved 38% & 18% of females' participation in farmers' and veterinarians' trainings, respectively.

Training delivery: Political instability in Bangladesh, in particular, severely hindered the planning and execution of training programs. With extreme support, swift and appropriate actions from the Bangladesh Regional Leads, trainings were held with lesser publicity to avoid attention in a university environment marred by protests and were organized at shorter notice to accommodate the overall uncertainty of protests.

Administrative hurdle: Due to change in leadership at the university levels and administrative constraints, the implementation of the project has faced certain delay initially in some regions, especially Punjab and Telangana, which was later brough back on the track.

Conclusion

Such collaborative project One Health is crucial for promoting responsible use of antibiotics in rural livestock and agricultural systems where scope of misuse is often high due to limited awareness. The project aims to raise awareness among veterinarians and livestock farmers about the threat of AMR and its impact on human and animal health. It also emphasizes the discouragement of self-medication and over-the-counter use of antibiotics. Further, the farmers are also encouraged to adopt adequate biosecurity measures and nutritional management to keep their herd heathy. Veterinarians, the primary prescribers of antibiotics for animals are also encouraged to ensure judicious antibiotic usage based on accurate diagnosis. They are also urged to engage in effective communication with the farmer to explain the risks associated with AMR.

Soybean Meal

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Introduction:

Soybean meal (Glycine max) is the most important protein source used to feed livestock and poultry. It represents two-thirds of the total world output of protein feedstuffs, including all other major oil meals. It is produced as a byproduct of soybean oil extraction and serves as a crucial source of amino acids, minerals, and energy for animals. Soybean meal is palatable, nutrient dense, high in digestibility, and a relatively consistent source of protein. It has an excellent amino acid profile and is a concentrated source of protein and energy. Soybean can be fed as soybean meal, full fat soya, soya hulls and soybean oil.

History of soybeans:

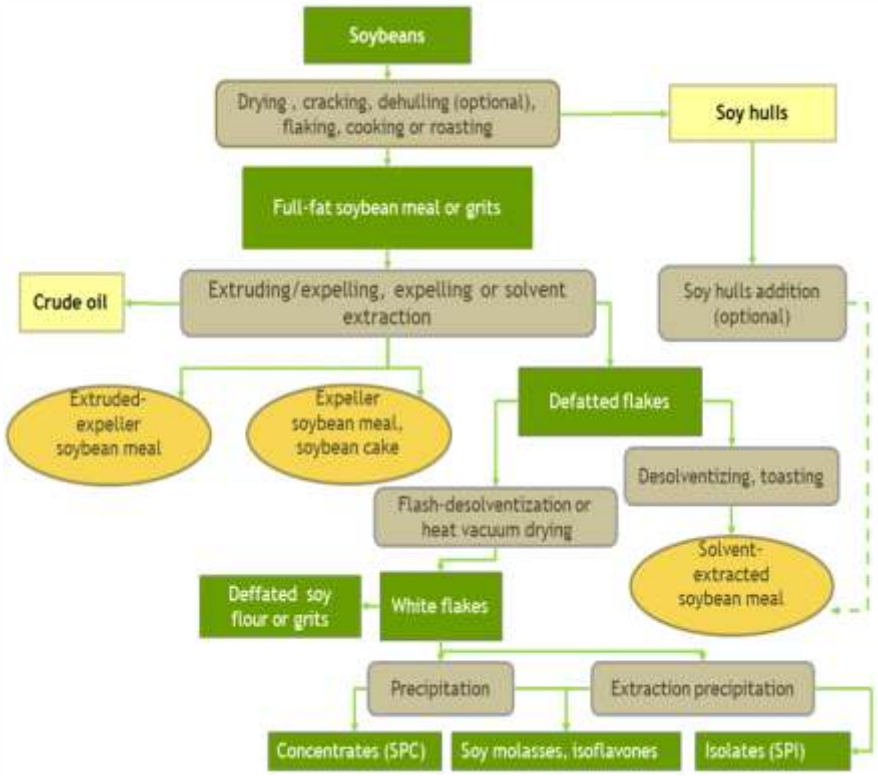
Soybean meal, a by-product generated from soybeans, a crop that has a very interesting background. The soybean is thought to have originated in China as many as 5,000 or more years ago. In 1804, sailors first brought soybeans from China to the United States as inexpensive ballast for their ships. The soybeans were dumped at U.S. ports to make room for cargo returning to China.

Soybeans were first grown in the United States in 1829 and used for a variety of purposes including production of soy sauce, as an inexpensive substitute for coffee by soldiers during the Civil War, as a "green manure" crop and as forage for cattle. The pioneering research with soybeans by George Washington Carver at Tuskegee Institute in 1904 opened new avenues for usage of soybeans as a source of protein and oil rather than simply for forage.

Crushing of soybeans for oil production began on a small scale in 1918. In 1929, approximately 10,000 soybean varieties were imported from China to U.S. researchers for study which laid the foundation for the rapid rising of the United States as a world leader in soybean production. A major event that boosted the use of soybeans was World War II. Before the war, the United States imported nearly one-half of its edible fats and oil.

At the onset of the war, oil supplies to the United States were cut off, so processors and users had to turn to other sources of oil, mainly soybean oil. Also, the increased demand for meat and meat products during the war was a contributing factor to increased use of alternative protein sources in foods and feeds. Other factors also contributed to the expansion of soybean usage. Discoveries of technologies that improved the quality of soybean oil for human use and the development of

solvent processing to more efficiently remove the oil and produce a higher quality meal with less heat-damaged protein were contributing factors. Finally, with the discovery in 1948 of vitamin B12, the "animal protein factor" found in meat scraps, fish meal, and other high-protein meals of animal origin, production of vitamins allowed the swine and poultry industries to use this supplement in all-plant, grain-soybean meal diets. All of these discoveries resulted in an explosive expansion of the soybean industry in the United States.



Soya manufacturing process:

Types of soybean products:

- **Soybean meal (SBM):** The most common form, produced after oil extraction. It is rich in protein and has a good amino acid profile.
- **Dehulled soybean meal:** A higher-protein, lower-fiber version of soybean meal that results from removing the hulls.
- **Full-fat soybean meal:** Whole soybeans that have been properly processed with heat. They provide both protein and fat, making them a good source of both energy and amino acids.
- **Soybean hulls:** The outer covering of the soybean, which contains high fiber and is less frequently used as a primary ingredient.

Global production and trade:

The leading producers and exporters of soybean meal are:

1. United States
2. Brazil
3. Argentina (historically a major exporter)
4. China (largest consumer)

Role of soybean meal in poultry:

- It is a major protein source for poultry due to its quality and amount of protein and amino acid profile.
- Maize and soybean based diet provides all essential amino acids.
- Inclusion level for chicks is 25% and for broilers, breeders and laying hens is

Nutrient composition:

	Soybean seed	Soybean meal	Dehulled soybean meal	Full fat soybean meal	Soybean hulls
Crude protein (%)	38-42	44-46	48-50	38-42	10-12
Fat (%)	18-20	1.5-3	<1.5	18-22	1-2
Crude fibre (%)	6-8	4-7	<3	5-9	36-40
Metabolizable energy (kcal/kg)	3000-3300	2200-2400	2400-2600	3000-3300	800-1200
					

30-40%.

- Phytase can be added to maize-soybean layer diets to increase the egg production, egg weight and feed consumption.
- Whole soybeans are recommended only up to 20-25% per diet as it will soften the body.

Advantages:

- High Protein Content
- Excellent Amino Acid Profile
- High Digestibility.
- Consistent Availability and Cost-Effectiveness
- Improved Performance and Health

Disadvantages and challenges:

- Anti-Nutritional Factors (ANFs): Raw soybeans contain several ANFs, such as trypsin inhibitors, lectins and phytates, which can severely impair digestion, cause pancreatic hypertrophy (enlargement of the pancreas), damage the intestinal lining and reduce nutrient absorption in poultry.
- Necessity of Proper Processing: Raw soy must be processed with heat to deactivate these ANFs. Both under-heating (leaving ANFs active) and over-heating (denature sensitive amino acids like lysine) can reduce the nutritional value of the feed.
- Indigestible Carbohydrates: Soybeans contain oligosaccharides (like raffinose and stachyose) that poultry cannot easily digest due to a lack of specific enzymes. These can cause digestive upset and wet droppings, even though on supplementation of enzymes to help in digestion.
- Phytate Content: A significant portion of phosphorus in SBM is bound in phytate, which is largely unavailable to monogastric animals. This necessitates the supplementation of inorganic phosphorus or the use of enzymes (phytase) to ensure adequate mineral availability.
- Price Fluctuations: The price of soy can be volatile, influenced by global market factors and climate patterns, which can affect feed formulation costs.

Deleterious factors:

Soybean meal contains a number of toxic, stimulatory and inhibitory substances including allergenic, goitrogenic and anticoagulant factors. The anti-nutritional factors associated with soybean meal are trypsin inhibitors, saponins, phytoestrogens, glucinins, goitrogens, lectins, mineral binding substances and several additional factors. In protease inhibitors, the kunitz inhibitor effects on trypsin factor and the bowman birk inhibitior effects on trypsin and chymotrypsin factor are of practical significance. The trypsin inhibitor has a lesser effect in ruminants as compared to monogastrics. The trypsin inhibitor is easily deactivated by heating the soybean prior to feeding. Soybean meal contains about 0.1% of genistein, which has estrogenic properties and a potency of 4.44 x 10-6 times that of diethyl stilbesterol. The effect of this constituent on growth rate has not been

Calculation:

Measurement of urease activity in units = $\frac{\textit{\% of red particles}}{\textit{50}}$

elucidated. Soybean flour and isolated soy protein have been used as a partial replacement for milk proteins in the formulation of milk replacers in calves.

Quality tests to assess soybean meal processing efficiency:

There are few tests available to check whether soybean is properly processed or not. They are

1. Urease activity test
2. Soluble protein
3. Protein Dispersibility Index (PDI).

1) Urease Activity:

It is an indirect method to detect whether trypsin inhibitors are destroyed to the maximum extent by measuring the presence of urease enzyme, which normally is present in soybean but destroyed by heat treatment along with trypsin inhibitor. Urease is measured in terms of change in pH during assay. The change in pH that is normally accepted in the industry is between 0.05 and 0.2. As pH test is time consuming, so commonly phenol red indicator method is used, results are interpreted by number of red spots which are correlated with the change in pH units. Higher values mean there is still residual urease (and trypsin inhibitor) indicating undercooked meal. One drawback of this test is that absence of any pH change just indicates the absence of urease activity in the soybean meal, which could be indicating either optimum cooking (up to the exact level of destruction of urease and thereby the trypsin inhibitor) or over cooking or over-processing of soybean meal.

Visual examination of soybean meal treated with urea – phenol red solution:

Observation	Urease activity	Range of urease	Assessment
No visible red colour	Inactive	0.00	Over cooked
Few scattered red particles	Slightly active	0.05 – 0.10	Properly cooked
Approximately 25% or more red particles	Moderately active	0.10 – 0.20	Properly cooked
Approximately 50% or more red particles	Very active	> 0.20	Under cooked

2) KOH protein solubility:

Since there is no indication of over-cooking by urease activity method, Araba and Dale from Canada developed an alternative method. In this method, solubility of protein in soybean meal is measured using a weak alkali solution of potassium hydroxide (0.2%). After confirming good correlation between the amounts of protein from soybean meal soluble in weak KOH solution and chick growth, the method is followed in many countries as a tool for assessing the quality of soybean meal. Heating tends to make the protein less soluble in weak alkali solution. Correctly heat-processed soybean meals should have protein solubility around 78-85%. Raw soybean meal is 100% soluble.

Procedure:

- Place 1.5 g of sample in 75 ml of 0.2% KOH solution and stir at 8500 rpm for 20 min
- 50 ml is taken, immediately centrifuged at 2500 rpm for 15 min
- Take aliquot 10 ml to determine nitrogen in liquid fraction by Kjeldahl method
- Results are expressed as percentage of original nitrogen content of the sample.

KOH Protein solubility	Assessment of the protein quality
< 70%	Overheating
78-85%	Optimal
>85%	Inadequate heat

3) Protein Dispersibility Index (PDI):

Among the available tests for determining protein quality in soybean products, the PDI is the simplest, most consistent, and most sensible method. This test measures the solubility of soybean proteins in water and is probably the best adapted to all soy products. The PDI method measures the amount of soy protein dispersed in water after blending a sample with water in a high-speed blender. PDI value between 15-30% is considered as good.

Procedure:

- 20 g of soybean with 300 ml deionized distilled water
- Blend at 8500 rpm for 20 min
- Centrifuge (1000 rpm for 10 min) / filter and measure the nitrogen content in liquid fraction by Kjeldahl method.

Market size and share forecast outlook 2025 to 2035:

The global soybean meal market is projected to grow from USD 103.3 billion in 2025 to USD 165.3 billion by 2035, registering a Compound Annual Growth Rate of 4.8%. The market expansion is being driven by the increasing demand for protein-rich animal feed and the rising popularity of plant-based diets.

Conclusion:

Soybean meal is an essential ingredient in animal feed due to its high protein content, digestibility and rich nutritional profile. By incorporating soybean meal in feed formulations, farmers can ensure better growth, improved immunity and higher productivity in their animals. As demand for animal protein grows, soybean meal continues to play a critical role in animal nutrition and agricultural sustainability.

ASSOCIATION OF LIVESTOCK SECTOR

Announcement

CLFMA 59th AGM & 67th NATIONAL SYMPOSIUM 2026

Dear Sir / Madam,

We are pleased to inform you that, the 59th Annual General Meeting (AGM) and 67th National Symposium 2026 will be held on **September 11 & 12, 2026.**

You are requested to kindly block your dates for 59th Annual General Meeting and 67th National Symposium 2026.

With warm regards,

Divya Kumar Gulati
Chairman

GLAMAC's CYNKA HBR 50 Triumphs 'Best Sustainable Poultry Nutrition Brand of 2025' at GEEF Global Healthcare Awards

New Delhi, 20 November 2025 — Glamac International Pvt Ltd, a leading name in Veterinary Formulations, Poultry Nutrition, and Feed Additives, has been honoured with the coveted **'Best Sustainable Poultry Nutrition Brand of the Year 2025'** for its breakthrough Gut Health product CYNKA HBR 50. The recognition was bestowed at the GEEF Global Sustainable Development Summit 2025, supported by the Department of Science & Technology, Government of India, held at ITC Maurya, New Delhi.

This award highlights GLAMAC's unwavering commitment to innovation, sustainability, and advanced research in developing next-generation veterinary solutions for a healthier, more resilient future. The GEEF (Global Excellence and Eminence Forum) Awards celebrate exemplary contributions across multiple global sectors.

More than 200 distinguished participants—including government leaders, industry experts, policymakers, academicians, and technocrats—attended the summit, which focused on "Sustainable Environment & Healthy Future for All." The event emphasised the inseparable link between the health of people and the health of the planet. The GEEF Foundation organised the summit in collaboration with the Department of Science & Technology, Government of India.

The evening culminated with the announcement of the prestigious GEEF Global Healthcare Awards in Sustainability & Healthcare, where 28 winners across 6 categories were honoured with trophies and citationsfor sustainable development goals (SDGs).GLAMAC proudly shared the platform with esteemed organisations like Power Grid Corporation, ONGC, NTPC, Bharat Petroleum, Grasim Industries, Tata Power, CESC, Zydus, JSW, Vedanta, ACC, Hyundai, Bajaj Group etc. Awards were presented by a distinguished panel including Mr. U.P. Singh, Former Secretary to the Government of India; His Excellency Rasmus Abildgaard Kristensen, Ambassador of the Embassy of Denmark to India; Dr. H.R.P. Yadav, Professor & Head, Amity University; and Mr. Punit Singh Nagi, Director, The GEEF. Among special guests were Dr. Bibek Bandyopadhyay,

Former Senior Advisor to the Government of India; Mr. Suresh Babu Muttana, Scientist E/Director at Department of Science and Technology, Govt. of India and Dr. K. Madan Gopal, Advisor & Head of Public Health Administration, NHSRC, and Former Senior Consultant – Health, NITI Aayog, whose esteemed presence added immense value to the occasion.

Representing GLAMAC at the ceremony were Mr. Abir Mukherjee, Managing Director, and Dr. Manish Chaurasia, AGM – Sales & Marketing.

Upon receiving the award, Mr. Mukherjee shared,
"This recognition reflects GLAMAC's relentless dedication to innovation and excellence. We are deeply honoured and will remain committed to leveraging our collaboration & technical expertise to deliver more groundbreaking sustainable solutions for Poultry.Our sustainability journey began with CLOSBO – consortium of Probiotics for Poultry Gut Integrity followed by PANBONIS—aNatural Vitamin D3 Metabolite from Herbonis, Switzerland—and has progressed with CYNKA HBR 50 and recently launched another sustainable product VAP- Viral Defence through PoultryFeed which is developed under technical collaboration with Taiwan. Our natures blendCYNKA HBR 50, a unique Natural Antidiarrheal and Antimicrobial – Gut Health Modulator for poultry,is a game changer and has already been recognised as 'Veterinary Pharma Innovation of the Year' by The Economic Times in 2024. CYNKA HBR 50 is an outcome of extensive research & trials and today, its impact resonates globally, addressing antimicrobial resistance (AMR) and supporting the 'One Health Program' promoted worldwide by the FAO."

He further added,"CYNKA HBR 50 is shaping the future of antibiotic-free poultry production and stands as a strong alternative to traditional AGPs for gut E.ColiandHalquinol in Poultry, ushering in a new era of sustainable poultry farming."

Advancements in Coryza Vaccine Research Leading to VH-Cor4 a Tetravalent Vaccine Powered of C3

A technical seminar series on advancements in the understanding and management of Infectious Coryza was conducted by VentriBiologicals Pvt. Ltd. from November 10 to 14, 2025. The Odisha sessions held at Balangir (November 10) and Berhampur (November 11) were led by Prof. Robert R. Bragg, a globally recognized authority from the University of the Free State, South Africa. Both meetings began with welcome addresses by Mr. SatayajeetMohanty (Zonal Manager), followed by the introduction of the distinguished speaker by Mr. Chita Sahoo (AGM). Prof. Bragg delivered detailed scientific insights covering disease epidemiology, strain variation, diagnostic advancements, and effective vaccination strategies, with a special focus on the VH COR4 vaccine powered by the C3 strain—designed to address the predominant Avibacteriumparagallinarum strains circulating in India. The sessions were moderated by Dr. SambhajiNimbalkar (AGM), ensuring clear scientific interpretation for all participants. Each event concluded with a vote of thanks from Mr. SatayajeetMohanty, acknowledging the valuable insights shared and the active participation of the attendees.

In Hyderabad on November 13 began with a welcome and speaker introduction by Mr. Suneel Sharma (AGM). Prof. Bragg delivered an in-depth session focusing on field-level challenges in Indian poultry systems and strategic approaches for effective Infectious Coryza management. The discussion session was moderated by Dr. Prakash Reddy (DGM) and Dr. Baburaj (DGM), during which Dr. Prakash Reddy also highlighted current local disease issues and interacted with team members for better field understanding. The Siddipet meeting on November 14 followed a similar structure, beginning with a welcome and speaker introduction by Mr. Suneel Sharma (AGM). Prof. Bragg addressed pathogen dynamics, strain variability, and evidence-based Coryza control methods suited for Indian poultry farms. The session was moderated by Dr. Baburaj (DGM), and the program concluded with a vote of thanks by Mr. Suneel Sharma. These knowledge-sharing initiatives reinforce Venworld's commitment to bringing global scientific expertise to Indian poultry professionals and strengthening evidence-based disease management at the grassroots level.


VH-COR4
VH-COR4

17th Poultry India Expo 2025 Concludes on a High Note, Reinforcing India's Global Poultry Leadership

Legend in Poultry – Lifetime Achievement Award
Honoured to celebrate **Dr. D.Chandrasekaran,** M.V.Sc., Ph.D., Professor of Animal Nutrition (Retd.), TANUVAS, for his lifelong contributions to poultry nutrition and industry growth.

The **17th edition of Poultry India Expo 2025**, organised by the **Indian Poultry Equipment Manufacturers' Association (IPEMA),** concluded as a resounding success, reaffirming its position as **South Asia's largest and the world's most influential poultry industry platform.** Held from **November 25 to 28, 2025, at Hyderabad,** the four-day mega event witnessed unprecedented participation from India and across the globe, setting new benchmarks in scale, collaboration, innovation, and knowledge exchange.

Over the years, Poultry India Expo has evolved beyond a conventional trade exhibition. The 2025 edition clearly demonstrated this transformation, emerging as a **strategic convergence point for technology providers, policymakers, farmers, integrators, veterinarians, researchers, entrepreneurs and global investors.** With its powerful theme, **"One Nation, One Expo,"** the event successfully unified the entire poultry value chain under one roof, driving collective progress toward a future-ready poultry ecosystem.

Powering Global Poultry Innovation

The 17th Poultry India Expo was marked by **robust global participation**, reflecting the growing international confidence in India's poultry industry. Delegations, exhibitors and experts from more than **50 countries** participated, showcasing advanced solutions tailored to modern poultry production challenges.

From breeding and genetics to feed technology, automation, animal health, sustainability and green energy solutions, the expo served as a **live demonstration of how innovation is reshaping poultry farming worldwide**. Cutting-edge technologies addressing efficiency, biosecurity, climate resilience and cost optimisation were presented, enabling stakeholders to gain first-hand exposure to global best practices.

The scale and diversity of participation reinforced Poultry India Expo's standing as a **global innovation hub**, where ideas move beyond discussion to real-world application.

India's Rising Global Standing in Poultry

India's poultry sector continues to register impressive growth, and this progress formed the backbone of discussions and deliberations at the expo. The country currently ranks **second globally in egg production, producing 142.77 billion eggs in 2023–24,** and remains among the **top four broiler-producing nations worldwide.**

The poultry sector plays a critical role in **national nutrition security**, offering affordable, high-quality animal protein to millions. At the same time, it is a major contributor to **rural employment and income generation,** supporting farmers, workers, traders and allied industries across the value chain.

Industry estimates presented during the expo indicated sustained annual growth of **8–10 percent in chicken meat** and **6–8 percent in egg production,** driven by rising urbanisation, changing food habits, population growth and expanding food service and processing sectors.

This consistent growth trajectory positions India as a **key global poultry powerhouse**, capable of meeting both domestic demand and emerging export opportunities.

"One Nation, One Expo": A Unifying Vision

The theme **"One Nation, One Expo"** resonated strongly throughout the event. It symbolised unity, integration and shared responsibility across India's diverse poultry landscape—spanning small farmers, large integrators, equipment manufacturers, researchers and policymakers.

By bringing the entire ecosystem together on a single platform, Poultry

Shri Ponnala Lakshmaiah, Hon'ble Former Minister

Shri Tummala Nageswara Rao, Hon'ble Agriculture Minister, Telangana

India Expo 2025 accelerated **collaboration, innovation and knowledge transfer.** It bridged regional and sectoral gaps, encouraging dialogue on common challenges such as feed cost volatility, disease management, sustainability, climate change and market stability.

The theme also reinforced India's ambition to project a **cohesive global image,** positioning the country as a reliable hub for poultry technology, expertise and investment.

Stronger Global and National Alliances

One of the defining highlights of the 17th edition was the strength and breadth of its partnerships. Poultry India Expo 2025 proudly collaborated with:

- **16 overseas poultry associations**
- **40+ national-level poultry bodies**
- **18 national poultry media houses**
- **15 global media organisations**
- **100+ mainstream and digital influencers**

These alliances significantly enhanced the expo's global outreach and visibility. International associations facilitated cross-border knowledge exchange, while national bodies strengthened farmer engagement and policy dialogue. Media partnerships ensured that innovations, discussions and outcomes reached a wider audience, amplifying the event's impact well beyond the exhibition halls.

This extensive network of collaborations made the 2025 edition the **most connected and globally integrated Poultry India Expo to date**.

Industry–Government Synergy Takes Centre Stage

Strong industry–government collaboration was a recurring theme at the expo, reflecting growing policy support for the poultry sector.

The event was inaugurated by **Shri Vakiti Srihari, Hon'ble Minister for Animal Husbandry, Telangana,** who served as the Chief Guest. He also graced the Poultry Knowledge Day sessions held on November 25, underlining the importance of knowledge-driven growth and scientific management in poultry farming.

From November 26 to 28, the expo was further honoured by the presence of several distinguished leaders from Telangana, whose participation reinforced government commitment toward sectoral advancement:

- **Shri Ponnam Prabhakar Goud,** Hon'ble Minister for Transport & BC Welfare, Telangana, emphasised sustainability, inclusive growth and long-term sectoral resilience.
- **Shri Tummala Nageswara Rao,** Hon'ble Agriculture Minister, Telangana, highlighted the importance of empowering rural markets and preparing the poultry sector for future challenges.
- **Shri Ponnala Lakshmaiah,** Hon'ble Former Minister, visited the exhibition halls and motivated industry stakeholders through his encouraging interactions.
- **Shri Gaddam Ranjith Reddy**, Hon'ble Former Minister, expressed strong support for Poultry India Expo as South Asia's premier poultry platform.
- **Dr. K. Lakshman**, Hon'ble Member of Parliament, visited the expo and acknowledged the sector's role in innovation, employment and economic growth.

Their presence underscored the growing alignment between **policy frameworks and industry needs,** paving the way for a more supportive and enabling environment for poultry development.

IPEMA Leadership: Vision and Confidence

Reflecting on the success of the event, **Shri Uday Singh Bayas, President of IPEMA,** expressed pride in the expo's achievements and the industry's forward momentum.

"IPEMA's continued ability to inspire innovation and unite global and national stakeholders demonstrates the true strength of India's poultry sector. The alliances forged this year reaffirm our industry's future-ready vision and global relevance," he said.

Under IPEMA's leadership, Poultry India Expo has grown into a **strategic industry institution,** consistently raising standards and expanding global engagement.

A Record-Breaking Showcase

The scale of Poultry India Expo 2025 was truly historic, setting multiple records:

- **550+ exhibitors** participated
- Representation from **50+ countries**
- **51,251 industry visitors** attended
- **35,000 square metres** of exhibition space
- **Seven world-class, air-conditioned exhibition halls**

The exhibition halls were abuzz with live demonstrations and product launches across key segments, including:

- Breeding and genetics
- Hatchery technology and farm automation
- Feed milling, feed additives and advanced nutrition
- Environment-controlled (EC) housing and ventilation
- Veterinary diagnostics, vaccines and biosecurity solutions
- Sustainable egg processing technologies
- Manure management, biogas and green poultry innovations

The diversity and depth of exhibits highlighted how technology is enabling poultry producers to enhance efficiency, reduce costs, improve animal welfare and meet sustainability goals.

Addressing Industry Challenges Head-On

Beyond showcasing innovations, the expo served as a critical platform to address pressing challenges facing the poultry sector. Discussions and exhibits focused on:

- Emerging and re-emerging poultry diseases
- Biosecurity and disease prevention strategies
- Feed ingredient price volatility
- Climate stress and heat-management solutions
- Environmental sustainability and waste management
- Digitalisation and smart farm technologies

By bringing together solution providers, researchers and practitioners, the expo fostered **practical, implementable approaches** rather than theoretical discussions.

Thought Leadership: Poultry Knowledge Day 2025

The **Poultry Knowledge Day 2025** emerged as a flagship intellectual component of the expo. The seminar featured industry experts, scientists, policymakers and business leaders who shared insights on future-oriented strategies.

Key focus areas included:

- Prevention and management of emerging poultry diseases
- Future-ready feed planning and alternative ingredients
- Manure management and sustainability frameworks
- Unlocking rural and semi-urban market potential
- Career opportunities and skill development for future poultry professionals

These sessions reinforced the importance of **knowledge, research and capacity building** as foundations for sustainable sectoral growth.

Towards Viksit Bharat 2047

Poultry India Expo 2025 strongly aligned with the Hon'ble Prime Minister **Shri Narendra Modi's vision of "Viksit Bharat 2047."** The event empowered farmers, entrepreneurs, veterinarians, researchers, students and global business leaders to actively contribute to India's development journey.

By promoting innovation, entrepreneurship, sustainability and skill development, the expo showcased how the poultry sector can serve as a **powerful engine of inclusive growth**, rural prosperity and nutritional security.

A Defining Moment for Indian Poultry

As the curtains closed on the 17th Poultry India Expo 2025, the message was clear: **India's poultry industry is confident, connected and future-ready.** The event not only celebrated achievements but also laid a strong foundation for the next phase of growth.

With expanding global partnerships, strong policy support, rapid technological adoption and a unified industry vision, Poultry India Expo continues to set the agenda for poultry development in India and beyond.

The 2025 edition will be remembered not just for its scale, but for its role in **shaping the future of poultry—locally, nationally and globally.**

India's Meat Production Landscape: Growth Trends, Regional Concentration and Emerging Challenges

India's meat sector has undergone a remarkable transformation over the past few years, reinforcing its position as a critical component of the country's agricultural and food economy. According to data from the Food and Agriculture Organization (FAO), India currently ranks fourth globally in total meat production. During 2024–25, the country's meat output reached approximately 10.50 million tonnes, reflecting a substantial increase of nearly 29 percent compared to 8.11 million tonnes recorded in 2018–19. This sharp growth highlights not only rising domestic demand but also structural changes within livestock production systems.

At the heart of this expansion lies poultry, which continues to dominate India's meat basket. Poultry alone accounts for nearly half of the nation's total meat production and has registered a growth of about 16 percent over the last five years. Its rapid expansion is driven by short production cycles, better feed conversion efficiency, relatively lower costs compared to red meat, and growing consumer preference for affordable animal protein. As urbanisation accelerates and dietary patterns evolve, poultry remains the most accessible and scalable source of meat for India's population.

While poultry leads in absolute volumes, the fastest relative growth has been observed in the small ruminant sector. Sheep and goat meat production has increased by approximately 35 percent and 30 percent respectively over the last five years. This growth reflects rising demand for chevon and mutton, particularly in urban markets and among communities with cultural and culinary preferences for small ruminant meat. The sector also plays a crucial role in supporting livelihoods in arid and semi-arid regions, where crop farming options are limited and livestock rearing offers economic resilience.

Despite strong national growth, India's meat production remains highly concentrated geographically. Just five states—West Bengal, Uttar Pradesh, Maharashtra, Andhra Pradesh and Telangana—together contribute more than 57 percent of the country's total meat output. This concentration highlights the emergence of regional production hubs that supply not only local markets but also distant consumption centres across the country.

Uttar Pradesh continues to dominate buffalo meat production, firmly holding its position as the largest contributor at the national level. The state accounts for close to 39 percent of India's total buffalo meat output, translating to roughly 760 thousand tonnes annually. Its production volume is more than three times that of Maharashtra, which ranks second. This dominance is supported by a large buffalo population, established slaughter infrastructure and strong inter-state trade networks.

Goat meat production shows a different regional pattern. West Bengal alone contributes nearly 31 percent of India's total chevon supply, making it the single largest producer in this category. The state's high production is closely linked to strong consumer demand, traditional rearing practices and well-developed local markets. Sheep meat production, on the other hand, is heavily concentrated in southern India. Andhra Pradesh and Telangana together account for nearly two-thirds of the country's total sheep meat output, reflecting favourable agro-climatic conditions, pastoral traditions and growing commercialisation of sheep farming.

Cattle meat production presents a contrasting trend. Kerala remains the leading centre for cattle meat production in India; however, the sector has experienced a significant decline of nearly 34 percent over the past four years. This decline points to changing regulatory environments, evolving consumption patterns and structural shifts within the livestock economy. It also underscores how policy, social factors and market dynamics can directly influence production trends at the state level.

An equally important dimension of India's meat sector is per capita availability, which varies sharply across states. Telangana stands out with a per capita meat availability of nearly 29 kilograms per annum—almost four times the national average. In contrast, states such as Gujarat and Himachal Pradesh record availability levels below one kilogram per person per year. These stark differences underline the uneven distribution of meat production and access across the country.

However, higher availability does not always translate into higher local consumption. A comparison of supply-side data with consumption trends from the National Family Health Survey (NFHS) reveals a clear disconnect in several regions. Haryana, for example, ranks second in terms of production availability, yet its reported consumption levels remain relatively low. This indicates that the state primarily functions as a production and supply hub, catering to demand in other regions rather than local consumption.

In contrast, southern states such as Telangana and Andhra Pradesh demonstrate a strong alignment

between production and dietary demand. These states not only lead in per capita availability but also record high consumption levels, reflecting cultural acceptance of meat and well-integrated local supply chains. This alignment reduces dependence on long-distance transport and contributes to greater market stability within the region.

The widening gap between production centres and consumption hubs raises important questions for policymakers and industry stakeholders. As meat production becomes increasingly centralised, logistical challenges related to transportation, cold-chain infrastructure and market integration become more pronounced. Long-distance movement of perishable products increases costs, heightens the risk of spoilage and places additional pressure on price stability.

From an economic perspective, the meat sector remains a vital pillar of India's agricultural economy. It supports millions of small and marginal farmers, traders, processors and workers across the value chain. Poultry and small ruminants, in particular, offer quick returns and employment opportunities, making them critical for rural livelihoods. Rising output also contributes to national food security by improving the availability of high-quality animal protein.

At the same time, rapid growth brings its own set of challenges. Disease risks, biosecurity concerns, feed price volatility and environmental pressures require careful management. Regional concentration of production increases vulnerability to shocks such as disease outbreaks or market disruptions in specific states. Diversifying production geographically and strengthening local consumption ecosystems could help mitigate these risks.

Understanding these trends is therefore essential for informed decision-making. Investment in infrastructure, especially cold storage, processing facilities and efficient transport networks, will be crucial to bridge the gap between production and consumption regions. Equally important is the need for data-driven planning to ensure that growth remains inclusive, sustainable and aligned with nutritional needs.

In conclusion, India's meat sector is experiencing robust growth, driven largely by poultry and supported by expanding small ruminant production. However, the increasing concentration of output in a handful of states and the mismatch between availability and consumption highlight structural imbalances within the system. Addressing these challenges will be key to ensuring long-term stability, fair pricing and equitable growth. As demand continues to rise, a more balanced and resilient meat production landscape will be essential for strengthening India's food system and rural economy.

Editorial Calendar 2026

Publishing Month: **January** Article Deadline : **18th, Dec. 2025** Advertising Deadline : **20th, Dec. 2025** Focus : **Opportunities and Challenges**	Publishing Month: **February** Article Deadline : **18th, Jan. 2026** Advertising Deadline : **20th, Jan. 2026** Focus : **Budget**	Publishing Month: **March** Article Deadline : **18th, Feb. 2026** Advertising Deadline : **20th, Feb. 2026** Focus : **Disease Prevention**	Publishing Month: **April** Article Deadline : **18th, March 2026** Advertising Deadline : **20th, March 2026** Focus : **Summer Stress Management**
Publishing Month: **May** Article Deadline : **18th, April 2026** Advertising Deadline : **20th, April 2026** Focus : **Cold Chain**	Publishing Month: **June** Article Deadline : **18th, May 2026** Advertising Deadline : **20th, May 2026** Focus : **Nutrition**	Publishing Month: **July** Article Deadline : **18th, June 2026** Advertising Deadline : **20th, June 2026** Focus : **Biosecurity**	Publishing Month: **August** Article Deadline : **18th, July 2026** Advertising Deadline : **20th, July 2026** Focus : **Sustainability**
Publishing Month: **September** Article Deadline : **18th, August 2026** Advertising Deadline : **20th, August 2026** Focus : **Egg Production & Processing**	Publishing Month: **October** Article Deadline : **18th, September 2026** Advertising Deadline : **20th, September 2026** Focus : **Processing & Packaging**	Publishing Month: **November** Article Deadline : **18th, October 2026** Advertising Deadline : **20th, October 2026** Focus : **Winter Stress**	Publishing Month: **December** Article Deadline : **18th, November 2026** Advertising Deadline : **20th, November 2026** Focus : **Food Safety**

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EGG
Daily and Monthly
Prices of December 2025

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 SUGGESTED EGG PRICES																																
Ahmedabad	675	675	680	685	685	685	685	685	685	685	685	685	690	695	700	700	700	700	700	700	705	710	710	710	710	710	710	710	710	710	680	695.32
Ajmer	661	665	668	668	668	660	651	651	651	658	660	675	680	680	680	670	660	660	660	685	705	708	708	690	673	673	673	673	666	650	640	670.00
Barwala	660	665	668	668	668	668	650	650	650	654	656	670	675	675	675	675	675	675	675	680	696	703	703	703	673	673	673	673	673	645	630	670.23
Bengaluru (CC)	675	675	675	675	675	675	675	675	675	675	675	675	680	685	690	690	690	690	690	690	695	700	705	705	705	705	705	705	705	705	705	688.55
Brahmapur (OD)	660	665	670	670	675	675	675	680	680	680	680	690	700	705	710	710	710	700	700	700	710	720	720	720	700	680	665	665	665	655	640	686.29
Chennai (CC)	670	670	670	670	670	670	670	670	670	670	670	670	680	690	690	695	695	695	695	695	700	710	710	710	710	710	710	710	710	710	-	688.83
Chittoor	663	663	663	663	663	663	663	663	663	663	663	663	673	683	683	688	688	688	688	688	693	703	703	703	703	703	703	703	703	703	703	682.52
Delhi (CC)	690	695	697	697	697	697	697	697	697	697	697	710	710	710	710	710	710	710	710	710	750	750	750	750	750	750	730	700	700	700	680	711.55
E.Godavari	635	640	645	645	650	650	650	650	650	650	650	655	665	670	675	675	675	675	675	675	680	690	695	695	695	665	665	665	665	665	620	663.06
Hospet	615	615	615	615	615	615	615	615	615	615	615	615	620	625	630	630	630	630	630	630	635	640	645	645	645	645	645	645	645	645	645	628.55
Hyderabad	635	640	645	651	651	651	651	651	651	651	651	651	656	661	666	671	671	671	650	650	660	670	675	675	675	675	650	650	650	650	630	655.97
Jabalpur	665	665	670	670	670	670	660	660	660	660	660	665	675	685	695	695	680	680	680	680	701	710	710	710	710	685	675	665	665	665	655	677.29
Kolkata (WB)	690	695	700	705	710	710	710	715	720	720	720	725	735	735	735	735	725	725	725	730	750	760	760	760	730	700	705	705	705	685	685	719.68
Ludhiana	658	658	665	665	665	665	665	650	650	650	654	658	675	675	675	675	675	675	675	675	685	700	700	700	700	670	670	670	670	670	640	670.26
Mumbai (CC)	700	705	710	715	715	715	705	705	705	695	695	700	710	720	725	730	730	730	710	710	720	730	740	745	745	735	725	710	710	710	710	716.45
Mysuru	675	675	675	675	675	675	675	675	675	675	675	675	680	685	690	690	690	690	690	690	695	701	706	706	706	706	706	706	706	706	706	688.87
Namakkal	610	610	610	610	610	610	610	610	610	610	610	610	615	620	625	625	625	625	625	625	630	635	640	640	640	640	640	640	640	640	640	623.55
Pune	700	705	710	715	715	715	705	705	705	705	705	705	705	715	720	725	725	725	715	715	725	735	740	740	740	730	725	715	715	715	705	716.77
Raipur	670	680	685	685	685	680	665	640	640	641	655	655	665	680	680	685	700	665	665	660	680	701	701	701	680	670	660	650	655	655	640	670.13
Surat	685	690	695	695	700	700	700	700	700	690	690	690	695	700	705	710	710	710	700	700	705	710	715	715	715	715	715	715	715	715	700	703.23
Vijayawada	665	665	670	670	670	670	670	670	670	670	670	675	690	695	700	700	700	700	700	700	700	715	720	720	720	700	690	680	680	680	660	686.61
Vizag	625	630	640	640	640	640	640	640	640	640	640	645	660	670	675	675	675	675	675	675	680	702	702	702	702	670	660	660	660	660	660	661.23
W.Godavari	635	640	645	645	650	650	650	650	650	650	650	655	665	670	675	675	675	675	675	675	680	690	695	695	695	665	665	665	665	665	620	663.06
Warangal	637	642	647	653	653	653	653	653	653	653	653	653	658	663	668	673	673	673	652	652	662	672	677	677	677	677	652	652	652	652	632	657.97
Prevailing Prices																																
Allahabad (CC)	700	705	705	705	700	695	695	690	690	700	705	710	715	715	715	715	705	700	700	710	738	738	738	738	729	719	705	714	714	714	705	710.55
Bhopal	670	670	680	680	680	680	680	670	660	660	670	675	690	695	700	700	690	690	660	670	700	710	710	710	710	690	680	660	660	660	660	681.29
Indore (CC)	665	670	670	675	675	670	660	660	660	660	665	675	685	685	690	685	680	670	675	680	700	710	710	710	700	690	680	680	680	670	660	678.87
Kanpur (CC)	690	695	695	695	695	695	695	681	681	695	695	710	710	710	710	710	690	690	690	700	733	733	733	733	733	714	695	705	705	695	695	703.42
Luknow (CC)	714	714	714	714	714	714	714	707	707	717	717	733	733	733	733	733	714	714	714	733	750	762	762	762	752	733	714	723	723	714	714	725.65
Muzaffurpur (CC)	720	725	730	730	730	730	710	710	710	715	715	730	735	735	735	735	735	720	720	740	760	765	765	765	735	735	735	735	735	710	700	730.65
Nagpur	660	690	690	690	690	680	670	670	650	650	665	665	675	685	685	700	685	690	680	680	685	685	705	715	705	700	675	665	665	665	660	679.84
Patna	720	725	730	730	730	730	710	710	710	715	715	730	735	735	735	735	735	720	720	740	760	765	765	765	735	735	735	735	735	710	700	730.65
Ranchi (CC)	704	704	714	714	714	714	714	724	724	724	724	724	724	752	752	752	738	724	724	738	762	762	762	762	752	747	733	733	733	714	705	731.19
Varanasi (CC)	700	707	713	713	713	707	700	700	700	707	717	727	727	733	733	733	724	717	717	733	750	750	750	750	740	733	723	717	717	717	707	721.77

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