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Volume 12 | Issue 4 | Feb-2026

Monthly Magazine for Feed Industry

**Summer Management Strategies
for Commercial Layers**

**Dairy & Poultry 2025-26: Growth,
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SUBSCRIPTION INFORMATION:

| | Simple Post | Courier | Overseas |
|------------|-------------|----------|----------|
| One Year | : INR 1200 | INR 1800 | USD 300 |
| Three Year | : INR 3300 | INR 4800 | USD 900 |
| Five Year | : INR 5200 | INR 6500 | USD 1500 |

Printed by: Jaiswal Printing Press | **Published by:** Prachi Arora | **On behalf of:** BENISON Media | **Printed at:** Chaura Bazar, Karnal-132001, Haryana | **Published at:** SCO-17, 2nd Floor, Mugal Canal Market, Karnal-132001, Haryana | **Editor:** Prachi Arora

Cover Image Source :

Think Grain Think Feed is a monthly magazine published by BENISON Media at its office in Karnal. Editorial policy is independent. Views expressed by authors are not necessarily those held by the editors. The data/information provided in the magazine is sourced through various sources and the publisher considers its sources reliable and verifies as much data as possible. However, the publisher accepts no liability for the material herein and consequently readers using this information do so at their own risk. Although persons and companies mentioned herein are believed to be reputable, neither BENISON Media, nor any of its employees or contributors accept any responsibility whatsoever for such persons' and companies' activities. All legal matters are subjected to Karnal Jurisdiction.

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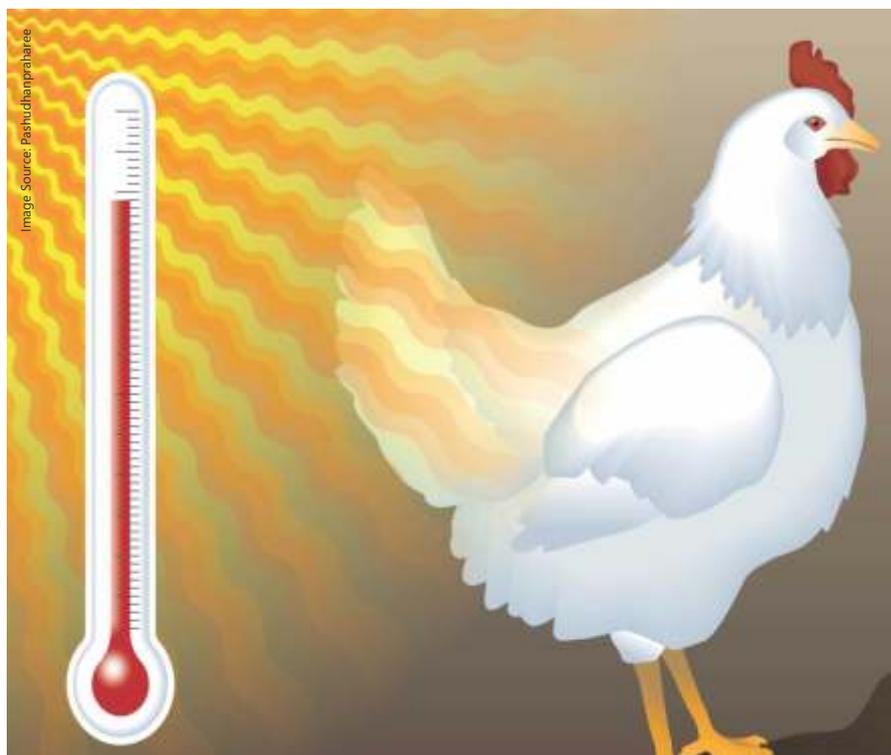
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Nutrition Expert

Summer Management Strategies for Commercial Layers

By **Dr J. Raju, Assistant Professor, P.V. Narsimha Rao**

Telangana Veterinary University, Hyderabad and Dr I. Bala Sundaram, Poultry Consultant, Telangana



With the India Meteorological Department (IMD) forecasting another exceptionally hot year in 2026, effective heat-stress management in commercial layers has become essential for sustaining egg production and farm profitability. In tropical regions like India, where temperatures may reach 48°C, proactive intervention is critical. Heat stress begins when ambient temperatures rise above the thermoneutral zone (18–25°C), forcing birds to divert energy from production toward body cooling. Affected layers exhibit panting, increased water intake, and lethargy, and in severe cases, mortality due to heat stroke. Feed intake declines by approximately 2–3 g for every 1°C rise above 30°C, leading to nutrient deficiencies.

Simultaneously, gut integrity and digestive enzyme activity are impaired, disturbing beneficial microflora, reducing nutrient utilization, and weakening immunity. Consequently, egg production may decline by 13–57%, egg weight by 3–5%, and shell thickness by 1–10%. Albumen quality and Haugh unit scores may deteriorate, and the incidence of cracked eggs may increase. Collectively, these effects can cause substantial economic losses, making heat-stress mitigation a top priority during summer.

Strategic Interventions: A Multifaceted Approach

Combating heat stress requires an integrated combining environmental control with precision nutrition.

I. Optimizing the Layer Environment

Efficient Ventilation Management: Strong airflow is essential to remove hot air and introduce fresh air. High-capacity, well-maintained fans, along with properly designed sidewall openings, ensure effective cross-ventilation and help maintain comfortable shed temperature.

Adoption of Evaporative Cooling Systems: Foggers in low-humidity areas, evaporative cooling pads with adequate ventilation and simple gunny curtains fitted with controlled drip system can significantly reduce house temperature approximately 3–5°C without wetting the litter when managed properly.

Roof Cooling and Insulation Practices: Reducing heat entry through the roof is critical. Periodic roof sprinkling,

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reflective roofing materials and traditional straw thatching (6–8 inches thick with proper slope) act as natural insulation and lower the internal temperature of the shed.

Stocking Density and Space Management: Avoiding overcrowding during summer improves air movement around birds, reduces heat load and minimizes bird-to-bird contact, thereby lowering stress.

Provision of Shade Around the House: Planting trees or installing shade nets and other protective structures around the poultry house reduces radiant heat and improves the surrounding microclimate.

Litter and Air Quality Management: Maintaining dry litter prevents ammonia buildup, improves air quality and enhances bird comfort and performance during hot weather.

II. Precision Nutrition for Heat-Stressed Layers

Energy-Dense Summer Rations: Replacing part of the carbohydrates with 1–2% vegetable oil improves energy density with lower heat production and helps maintain egg output. When temperatures exceed 27 °C, dietary energy can be increased by approximately 5%.

Balanced Protein and Amino Acids: Optimal crude protein levels must be maintained, as reduced summer feed intake already lowers protein

consumption. The use of highly digestible protein sources, synthetic amino acids, and protease enzymes enhances nutrient utilization and reduces metabolic heat production

Vitamin, Mineral and Electrolyte Fortification: Summer rations should contain 10–15% higher vitamin and mineral levels. Supplementation with Vitamin E (100–250 mg/kg), Vitamin C (100–200 mg/kg) and Vitamin A (15,000 IU/kg) supports immunity and eggshell quality.

Slightly higher inorganic phosphorus levels and adequate zinc (80–120 mg/kg) should be maintained. A dietary electrolyte balance of approximately 250 mEq/kg is recommended. Sodium may be supplied through sodium bicarbonate at 0.2–0.3% to maintain acid–base balance and reduce stress. Anhydrous betaine supplementation at 500–1,000 mg/kg supports cellular hydration.

Gut Health Support: Use of multi-enzymes (phytase, NSPases and protease) and poultry specific probiotics improves digestibility and maintains intestinal integrity during heat stress.

Summer Feeding Practices: Provide coarse mash with added oil and offer feed during early morning and late evening hours. Midnight feeding, supported by 1.5–2 hours of lighting, can further encourage feed intake. Supplying coarse calcium in

the afternoon supports optimal shell formation. **Water Management:** Ensure continuous supply of cool, clean water, as consumption may double in summer. Keep water below 25°C by frequent flushing. Supplement drinking water with electrolytes and vitamin C to maintain hydration and reduce stress.

III. Additional Management Considerations

Schedule vaccination, handling, and other routine activities during the cooler hours of the day to minimize stress. Adjust lighting programs to encourage feed intake during cooler periods. Closely monitor birds for signs of heat stress, including panting, reduced activity, and declining egg production.

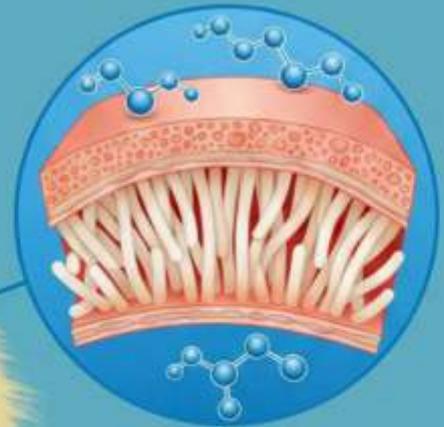
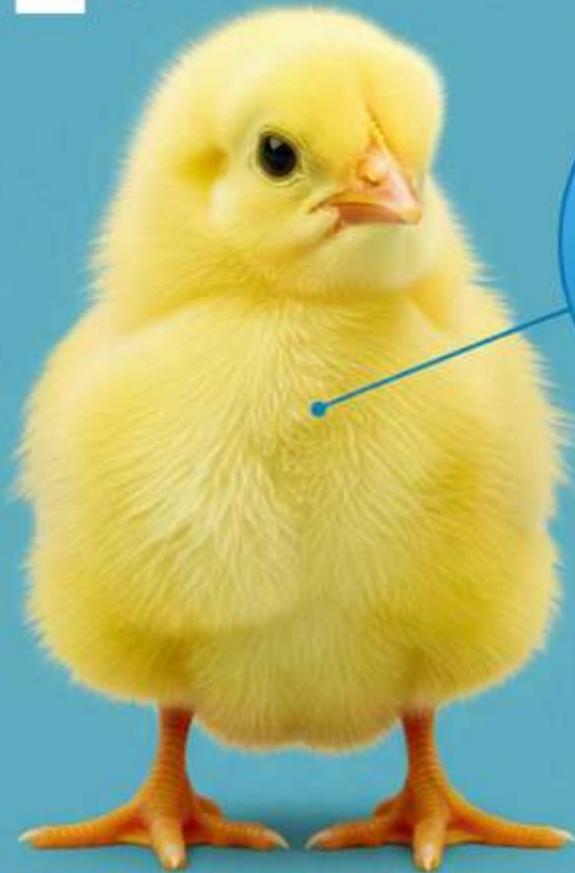
Administer vaccines early in the morning and adjust medication volumes during water-based vaccination to account for increased water consumption.

Conclusion

Effective heat stress management in commercial layers requires a proactive and integrated approach. Proper environmental control, precision nutrition and sound management practices help protect flock health and sustain egg production during summer. Continuous monitoring and timely corrective measures are key to maintaining performance, profitability, and long-term farm sustainability.



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Subclinical Mastitis: A Hidden Challenge Affecting the Feed Mill

By **Gnanasekar (GS) Rangasamy**, Novus

In India's competitive dairy feed industry, feed mills invest heavily in formulating high-performance products to improve productivity. However, a largely unseen challenge—subclinical mastitis—can significantly influence how farmers perceive feed effectiveness.

While this condition shows no visible symptoms in dairy cows, it can result in reduced milk yield, lower productivity, and farmer dissatisfaction. These outcomes may affect how feed performance is perceived and ultimately impact feed sales, brand reputation, and customer loyalty.

What is Subclinical Mastitis?

Subclinical mastitis is an inflammation of the udder that is not detected through visual inspection.

- Milk appears normal, but somatic cell count (SCC), a key indicator of milk quality, is elevated.
- The condition often goes unnoticed for weeks.
- Milk yield losses may range from 5% to 25%, depending on infection severity, stage of lactation, and herd management practices.
- Elevated SCC can reduce milk processability for procurement companies. For example, high SCC can lower paneer yield and reduce the shelf life of milk products.

Subclinical mastitis is primarily a herd-level management challenge.

Nutrition alone cannot prevent or cure the condition. However, appropriate nutrition can support immune function, tissue integrity, and overall cow health, thereby helping reduce

the risk and severity of subclinical mastitis.

Prevalence in India

This condition affects 12–70% of lactating cows depending on farm hygiene, region, and herd size (Krishnamoorthy et al., 2021). These figures reflect industry-wide observations and are not linked to specific feed or nutrition programs.

As shown in image 1, subclinical mastitis is prevalent across all regions of India and represents a significant economic burden for farmers, as well as for the feed and dairy industries.

The Overlooked Challenge for Feed Mills

At first glance, a feed miller might not associate subclinical mastitis with feed performance. However, subclinical mastitis can influence how farmers evaluate their feed programs, especially when milk yield does not meet expectations.

When cows face health or management challenges, farmers may attribute reduced milk yield to feed quality—even when nutrition is not the root cause. This can undermine confidence in a feed brand and prompt farmers to explore alternative nutritional strategies, potentially affecting purchasing patterns and customer retention.

Because feed is closely linked to animal performance, variations caused by on-farm conditions, especially subclinical mastitis, can make it difficult for feed mills to demonstrate the true value of premium formulations. As a result, sales and technical support teams may spend more time addressing farmer



Image 1: Map showing the incidences of subclinical and clinical mastitis by state. (Source: Research in Veterinary Science Volume 136, May 2021, Pages 561-586)

concerns, reducing the time available for new business development.

Economic Impact for a 1,000 MT Feed Mill (Monthly)

Consider a feed mill producing 1,000 metric tons of feed per month. Assuming an average consumption of 5 kg per cow per day, this volume supports approximately 6,500 cows monthly.

If 30% of these cows consume 0.5 kg less feed per day due to subclinical mastitis, the mill would lose approximately 30 metric tons of feed sales per month, nearly 3% of total production. This represents lost opportunity within the existing customer base.

At an assumed feed price of INR 25 per kg, this equates

to a potential monthly revenue loss of approximately INR 7 lakh.

What Can Feed Mills Do?

Feed mills seeking to maintain customer satisfaction and support udder health have several options.

1. Optimize Nutritional Strategies

Micronutrients, particularly trace minerals can play an important role in supporting immune function and tissue integrity. However, not all mineral sources are equal. Highly bioavailable trace minerals should be prioritized. Bis-chelated organic trace minerals have demonstrated superior absorption compared to inorganic forms, ensuring that a greater proportion of supplemented minerals is

utilized by the cow.

2. Support Farmer Education

Feed mills serve a diverse customer base, and not all farmers may be fully aware of the management factors that influence udder health, milk yield, and overall dairy performance.

Providing guidance on:

- Udder hygiene best practices
- Proper milking routines
- Monitoring SCC trends
- Understanding the role of micronutrients in cow performance

can strengthen farmer knowledge while enhancing the mill's credibility and advisory role.

3. Encourage Herd-Level Monitoring

Promoting regular SCC testing and subclinical mastitis screening as part of herd health management allows farmers to evaluate feed programs alongside on-farm practices. This ensures a more complete and accurate understanding of cow performance.

Conclusion

By supporting farmers with practical information, management insights, and consistent nutritional programs, feed mills can strengthen customer relationships, reinforce brand trust, and protect business performance against challenges that may otherwise be misattributed to feed quality.

References are available upon request

Dairy & Poultry 2025–26: Growth, Volatility, and the Next Phase of Modernisation

A Conversation with Amit Mittan, DeHeus, and Dr. Avinesh Sharma, Sunjin



Amit Mittan

India's livestock sector is growing fast, but rising feed costs, climate stress, disease risks, and structural gaps continue to challenge the industry. Two international feed leaders with production facilities in Punjab offer their perspective. DeHeus, a Dutch company, entered India in 2017 and recently launched a greenfield factory with an investment of USD 17 million for poultry and livestock feed. Sunjin, a South Korean firm, is investing INR 120 crore to set up a feed plant in Rajpura with an annual capacity of 200,000–350,000 MT. Mr. Amit Mittan and Dr. Avinesh Sharma discuss the current state and future of dairy and poultry in India.

From a market and strategy perspective, what is fundamentally changing the playbook for dairy and poultry in 2025–26?

Amit Mittan:

What's reshaping the playbook in both dairy and poultry is the farmer's growing focus on feed efficiency and risk management. Feed remains the single largest controllable cost in animal production, so today the feed narrative in India is essentially a combination of raw-material dynamics and quality compliance. Farmers are no longer asking only, "What will maximize output?" They are now asking, "What will stabilize margins?"

In Dairy: The Shift from Quantity to Quality

In dairy, we are witnessing a clear transition from volume-driven

production to a quality-linked payment ecosystem. SNF- and fat-based procurement pricing, expansion of organized milk collection, and product diversification are pushing farmers toward balanced rations and performance minerals, especially in high-output belts.

The implementation phase of White Revolution 2.0 (2024–25 to 2028–29) is significant. Strengthening cooperatives and organized procurement systems typically improves adoption of scientific feeding, mineral supplementation, and standardized feed quality systems. Organized systems reward quality and quality begins with nutrition.

However, a large share of milk still flows through mixed organized and unorganized channels, which directly affects how consistently farmers access extension services, balanced feed, and veterinary support.

In Poultry: Commercial Discipline and Volatility Management

The poultry sector is far more commercially structured. Data from the Department of Animal Husbandry and Dairying (BAHS) highlights the dominant contribution of commercial systems, while backyard production remains meaningful but secondary. Commercialisation has deepened integration models — feed, health, and procurement are increasingly managed as a single ecosystem. However, volatility in realizations and periodic disease shocks keep integrators and farmers extremely

focused on least-cost formulation and quality assurance. Margin discipline is immediate and unforgiving, accelerating the shift toward compound feed, tighter formulation control, and structured testing systems.

Dr. Avinesh Sharma (Dairy Sector):

India remains the world's largest milk producer, yet average milk yields per animal remain below potential in many regions. The gap stems from uneven adoption of scientific breeding, balanced feeding, and structured herd management.

Fodder continues to be a structural bottleneck. India faces a deficit of nearly 25–30% in green fodder and 15–20% in dry fodder. Rising raw material prices have increased milk production costs at the farm level. While the dairy feed industry is emerging with more nutritive and scientifically formulated products, feed alone cannot ensure a healthy herd. Farm management, disease control, and veterinary support remain equally vital. Cold-chain gaps and inconsistent milk quality further limit price realization. Without strong veterinary outreach and professional nutrition advisory at the grassroots level, sustained improvement remains difficult.

What are the core growth drivers powering dairy and poultry in 2025–26?

Amit Mittan:

Growth today is demand-led but efficiency-enabled.

1. Consumption Patterns: There is sustained growth in demand for affordable animal protein, particularly eggs and chicken, which remain the most accessible protein sources for a large population. Dairy consumption is moving up the value chain, with stronger demand for curd, cheese, whey-based beverages, and other processed products. This shift toward value-added dairy strengthens organized procurement systems and supports higher-quality feeding practices at the farm level.
2. Productivity Upgrades: Genetics, housing, management systems, and scientifically balanced nutrition are helping farmers extract more output per animal rather than merely expanding herd size. The focus is increasingly on performance per unit of feed.
3. Policy & Institutional Support: Expansion of cooperative networks and private procurement infrastructure has strengthened milk collection systems. Organized procurement improves quality-linked payments, incentivizing adoption of balanced rations and mineral

supplementation.

4. Raw-Material Availability: Final crop estimates for 2024–25 placed maize production at 434.09 LMT and soybean at 152.68 LMT. This improved formulation flexibility and feed economics, though price volatility remains a structural feature.

In summary, growth is being driven by rising protein consumption, supported by productivity gains, policy backing, and relatively improved ingredient availability — all managed under constant price and supply volatility.

How is the focus on precision nutrition and scientific feeding shaping productivity and growth in India's dairy sector?

Dr. Avinesh Sharma:

At the macro level, rising domestic and global consumption of dairy products remains the primary engine. Precision nutrition has become central, with feed formulations increasingly emphasizing digestibility, intake, palatability, and nutrient efficiency. Instead of expanding herd sizes, the focus has shifted to higher milk yields and better reproductive performance from existing animals. Scientific feeding, when



Dr. Avinesh Sharma

implemented correctly, can increase milk yields by:

- 15–20% in crossbred cows
- 8–10% in indigenous breeds

The growing use of feed additives, including trace minerals, yeast cultures, enzymes, and buffers, has improved feed efficiency and overall animal performance. The industry is moving toward:

- Precision and specialized nutrition
- Technology-enabled formulation
- Higher-quality compounded feed
- Expansion into under-served regions

Policy support has reinforced this momentum. Initiatives such as Rashtriya Gokul Mission, Kisan Credit Card, and National Programme for Dairy Development have strengthened genetic improvement, farm modernization, and access to finance. Institutional backing from NDDB and NABARD continues to promote scientific feeding and dairy entrepreneurship.

Which regions offer the highest growth potential?

Amit Mittan:

India is a clustered feed market, not a single uniform one. Geography is critical to understanding feed demand.

Dairy: North, West, and Central Strength

In 2024–25, the top milk-producing states were:

- Uttar Pradesh – 15.66%

- Rajasthan – 14.82%
- Madhya Pradesh – 9.12%
- Gujarat – 7.78%
- Maharashtra – 6.71%

Together, they contribute ~54% of national milk output. Peri-urban milk sheds and organized procurement hubs in these regions drive demand for:

- Compound cattle feed
- Bypass protein supplements
- Mineral mixtures
- Structured silage solutions

Poultry: A Southern Production Corridor

Egg production remains South-led, with leading states in 2024–25:

- Andhra Pradesh – 18.37%
- Tamil Nadu – 15.63%
- Telangana – 12.98%
- West Bengal – 10.72%
- Karnataka – 6.67%

This represents >64% of national egg production, giving feed businesses a “southern corridor” throughput advantage. Integration and infrastructure improvements in Eastern and Central India are creating additional growth headroom.

Highest Growth Potential

1. East & Central India – Rising protein consumption, expanding cold chain and processing infrastructure, and new poultry integrations create strong momentum. Organized dairy procurement is also expanding, improving compound feed

adoption.

2. Peri-Urban Milk Sheds in North & West India – Strengthened procurement networks and quality-linked payments accelerate adoption of premium cattle feed, mineral supplements, and performance nutrition.

Dr. Avinesh Sharma:

- Uttar Pradesh – immense untapped potential due to large cattle population
- Gujarat & Rajasthan – high milk yields and organized markets support feed volume growth
- Andhra Pradesh, Karnataka & Tamil Nadu – rapidly emerging as high-potential markets
- Punjab & Haryana – organized systems and high-yielding herds drive demand for premium feed

Under-served regions like Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat, and the North Eastern states present strong future growth opportunities.

Why is Punjab often cited as a dairy feed benchmark?

Dr. Avinesh Sharma:

Punjab is widely regarded as a benchmark because it combines strong farm fundamentals with a structured industry ecosystem.

Key strengths include:

- Strong dairy consumption culture and commercial mindset

- Dense, productive dairy cattle population
- High adoption of crossbred and HF animals
- Systematic farm management practices
- Advanced fodder planning, particularly high-quality maize silage
- Proactive veterinary services and vaccination programs

For over two decades, global and national feed manufacturers have invested in Punjab, supported by scientists, veterinarians, nutritionists, cooperatives, and progressive farmers. A recent example is the INR 120-crore Sunjin investment in Rajpura, establishing a feed plant with

200,000–350,000 MT annual capacity. Organized procurement, scientific feeding awareness, fodder availability, and policy support form a virtuous cycle: higher productivity drives feed adoption, which sustains commercial investment. Punjab is well-positioned to maintain its leadership for the next decade.

What can be replicated from the Punjab model?

Dr. Avinesh Sharma:

Key practices that can be adapted elsewhere include:

- Near 100% artificial insemination coverage
- High-quality compound feed at affordable prices
- Systematic fodder

- planning and silage preparation
- Proactive veterinary services and vaccination programs
- Strong cooperative awareness around balanced nutrition

Closing Thought

India's dairy and poultry sectors are expanding — but the next phase will belong to those who combine productivity, precision nutrition, structured procurement, and disciplined risk management.

The transformation has begun, but the scale of opportunity ahead is far greater than what has been achieved so far.

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Image Source: The Fish Site



Disease, Data, and Discipline: The New Mandate for Shrimp Farming

by **Anupa Velusamy**, KovaiBSF

The global livestock industry is currently facing a critical crisis marked by recurring disease outbreaks and growing antibiotic resistance. As an economically high-value, export-oriented sector, the shrimp industry is experiencing this pressure even more intensely.

During his presentation at the World Seafood Congress held in Chennai in early February 2026, Mr. Madhu Mohan Talluri, Technical Director, SGS Aqua Solutions, observed:

“Shrimp farmers are suffering greatly due to disease outbreaks. Most of these diseases are highly contagious and spread so quickly that there is little room for mitigation. The practical challenges farmers face in diagnosing and treating disease are of serious concern.”

Adding to this, Mr. Balasubramaniam, General Secretary, PFFI, emphasized the sector's instability due to price fluctuations, tariffs, and disease outbreaks. He noted:



“There is significant uncertainty in crop harvests due to disease. Much like the success seen in Ecuador, our industry is looking toward developing indigenous, disease-resistant shrimp species.”

The Case for Indigenous Shrimp Varieties

It may be time to seriously consider the commercial-scale development of indigenous shrimp varieties. A similar transformation has already been achieved in the poultry industry, where country chicken breeds were systematically improved to

create specialized, climate-resilient, and commercially competitive varieties suited for high-density farming. However, indigenous species development cannot follow a simple “grow and sell” approach. It requires long-term commitment, structured breeding programs, and dedicated marketing strategies. With proper positioning, indigenous shrimp varieties could potentially qualify for Geographical Indication (GI) tags, opening doors to niche markets and premium pricing.

Modern technology further strengthens this possibility. Improved traceability systems enhance marketability and consumer trust. The integration of Artificial Intelligence (AI) and Machine Learning (ML) with Mass Spectrometry (MS) has transformed analytical chemistry into a predictive, high-throughput science.

Dr. Niladri Sekhar Chatterjee, Senior Scientist at CIFT, is currently developing and presenting a handheld, real-time analytical probe. Such innovations not only enhance traceability and marketing potential but also provide scientific confidence in developing and validating new indigenous shrimp strains.

The Evolution of Shrimp Nutrition

Nutrition has emerged as another critical pillar in ensuring industry sustainability.

The focus is gradually

shifting from merely optimizing Feed Conversion Ratios (FCR) to enhancing immunity and overall health. Feed is no longer evaluated solely on crude protein levels or basic amino acid profiles. Today, we must deepen our understanding of animal health, immunity, and nutrigenomics.

Animal health is the primary economic driver of the shrimp industry. Better growth combined with higher survival rates is the real metric of success. Naturally derived health-enhancing ingredients are becoming central to global market demand.

In this context, Black Soldier Fly Larvae (BSFL)-based nutrition deserves serious attention.

Why BSFL Matters

BSFL is increasingly recognized as a strategic support ingredient in shrimp aquaculture. Being a terrestrial species, BSFL does not carry the aquatic pathogens often associated with marine-based feed ingredients. It complements fishmeal nutrition while significantly enhancing natural immunity in shrimp. Several Indian institutions — including CIBA, CMFRI, and CIFE — have studied the impact of BSFL-based diets on shrimp.

Mr. S. Santhana Krishnan, Director of Maritech, remarked:

“BSFL has great potential — not merely as a fishmeal replacer, but as a critical functional ingredient.”

Beyond its functional properties, BSFL's high protein content adds significant value.

From the farmer's perspective, practicality and price remain key considerations. Mr. Chandrasekar from Bhimavaram shared:

"If a natural ingredient can improve shrimp immunity, we are ready to try it in our grow-out ponds, as disease outbreaks are very challenging. However, the price must be viable."

Market-Ready BSFL Formats

Several commercially viable BSFL formats are already available, allowing flexible inclusion strategies:

- Fresh live BSFL
- Fermented BSFL
- Frozen BSFL pulp
- Dried BSFL
- Dried fermented BSFL
- Defatted BSFL meal
- Whole-fat BSFL meal

Each format serves different use cases within feed formulations.

In the Indian market,

defatted BSFL meal is currently priced between INR 120 and INR 180 per kilogram. Technical literature suggests inclusion levels between 10% and 25% to realize full functional benefits, particularly improved immunity. Its high protein levels also help maintain or enhance FCR. Lower mortality combined with improved growth presents a clear win-win proposition for the shrimp industry.

Scientific Backing

Research indicates that BSFL inclusion elevates specific defensive enzyme levels in shrimp, strengthening resistance against pathogens. Compounds such as lauric acid, chitin, and antimicrobial peptides (AMPs) are directly linked to improved immune responses.

Global experimental pathogen-challenge trials have demonstrated promising results with BSFL-based diets. However, further species-specific and climate-adapted trials are needed to

accelerate broader industry adoption.

Sustainability and Circularity

Large-scale adoption of BSFL-based feed would naturally stimulate BSFL farming across India. These larvae can be efficiently reared using food waste, vegetable waste, DDGS, mixed organic waste, and manure.

This approach not only supports shrimp immunity but also contributes meaningfully to addressing India's organic wet waste challenge.

The pathway forward is clear: circularity, sustainability, and science-backed nutrition must drive the next phase of shrimp industry growth.

The industry stands at a turning point. Disease resilience, indigenous species development, precision technology, and functional nutrition are no longer optional strategies rather these are essential pillars for securing the future of shrimp aquaculture.



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SWISS VITAMIN - E

SWISS VITAMIN - C

SWISS VITAMIN - K

SWISS VITAMIN - D2

SWISS VITAMIN - B2

SWISS VITAMIN - B9

SWISS VITAMIN - D3

SWISS VITAMIN - B5

SWISS VITAMIN - B1

AMINO ACIDS

- DL-Methionine
- L-Lysine Hcl
- L-Threonine
- L-Tryptophan
- L-Valine
- L-Isoleucine



ANIMAL FEED SUPPLEMENT



SWISS ANTIBIOTICS

- Chlortetracycline 15% (CTC) (BEST SELLER)
- Tiamulin 10/45/80
- Amoxicillin
- Ciprofloxacin
- Doxycycline
- Albendazole
- Fenbendazole
- Lincomycin Hcl
- Azithromycin
- Oxytetracycline
- Enrofloxacin
- Tetracycline Hcl
- Levofloxacin
- Virginiamycin 11%
- Anticoccidials



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Understanding Loose Droppings in Poultry

by **Dr. Nagesh Sonale**, Immeureka Animal Health

Introduction

Loose droppings in poultry are one of the most important early indicators of disturbances in digestion, gut integrity, renal function, or overall systemic health. In healthy birds, droppings exhibit a clearly defined tri-layered structure consisting of a firm brown faecal mass, a distinct white urate cap, and a thin surrounding layer of urine. Under normal physiological conditions, moisture content remains approximately 20–25%, allowing droppings to dry rapidly after excretion and helping maintain good litter quality and farm hygiene (Mozūrienė et al., 2016; Mozūrienė et al., 2024).

The diagnostic value of droppings lies in their rapid response to internal physiological changes. Subtle

disturbances within the digestive system are often reflected in droppings well before birds exhibit visible clinical illness. As highlighted by Dunlop et al. (2016) and Leeson & Summers (2009), alterations in droppings texture, moisture, or colour commonly appear 12–24 hours prior to overt disease signs. These early alterations originate from disruptions in intestinal transit time, water absorption, renal regulation, and gut barrier integrity, making droppings a practical and non-invasive tool for early flock health monitoring.

As gut function deteriorates, birds begin excreting excess water through the intestine. When droppings moisture rises beyond 75–80%, the normal tri-layered structure collapses, and droppings lose their form, becoming loose, watery, or foamy.



Normal dropping

Such changes indicate reduced nutrient absorption and increased intestinal permeability.

With further progression, droppings colour provides additional diagnostic clues:

- Greenish droppings are often associated with dysbiosis and altered bile metabolism.
- Yellow discoloration may indicate specific infectious challenges.
- The presence of blood typically reflects severe intestinal damage, particularly during coccidial infection (McDevitt et al., 2012; Williams, 2005).

Beyond individual birds, persistent loose droppings negatively affect litter quality, increase ammonia production, compromise bird welfare, reduce productivity, and elevate food-safety risks. Therefore, understanding the development, indicators, and implications of loose droppings is critical for timely diagnosis, effective intervention, and sustainable poultry production.

Continuous monitoring of droppings quality provides an accessible and highly effective means of detecting



loose dropping

gut health problems early and preventing avoidable economic losses (Van Immerseel et al., 2021).

Types of Loose Dropping

Loose droppings in poultry can be broadly classified into non-infectious and infectious causes. Non-infectious factors primarily disturb water balance, digestion, and gut physiology, whereas infectious causes directly damage intestinal or renal tissues, leading to diarrhoea or watery excreta

Non infectious

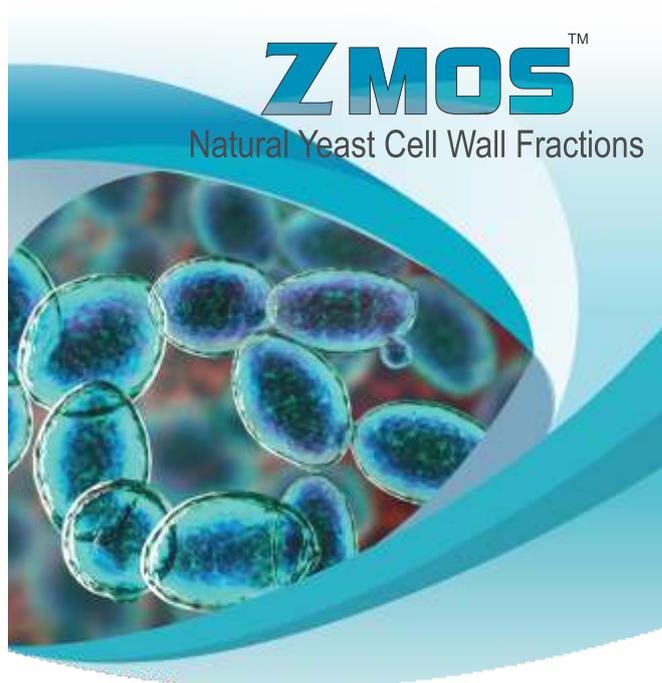
Non-infectious causes of loose droppings in poultry are mainly associated with environmental stressors, nutritional imbalances, and disruptions in gut physiology rather than direct pathogen involvement.

Heat stress is one of the most important factors; elevated temperatures increase water intake and impair intestinal tight-junction integrity, resulting in excessive faecal moisture (Lara & Rostagno, 2013; Quinteiro-Filho et al., 2010).

Poor ventilation, high humidity, overcrowding, and elevated ammonia levels damage intestinal epithelium

and alter gut motility, predisposing birds to persistent wet litter (Miles et al., 2004; Dunlop et al., 2016).

Nutritional factors also play a central role, particularly dietary electrolyte imbalance, where excess sodium, potassium, or chloride induces osmotic diarrhoea by drawing water into the intestinal lumen (Borges et al., 2004; Mushtaq et al., 2007). Diets rich in soluble non-starch polysaccharides from cereals such as wheat and barley increase digesta viscosity, reduce nutrient absorption, and trap water, unless appropriate enzymes are included (Choct & Annison, 1992; Choct, 2009).



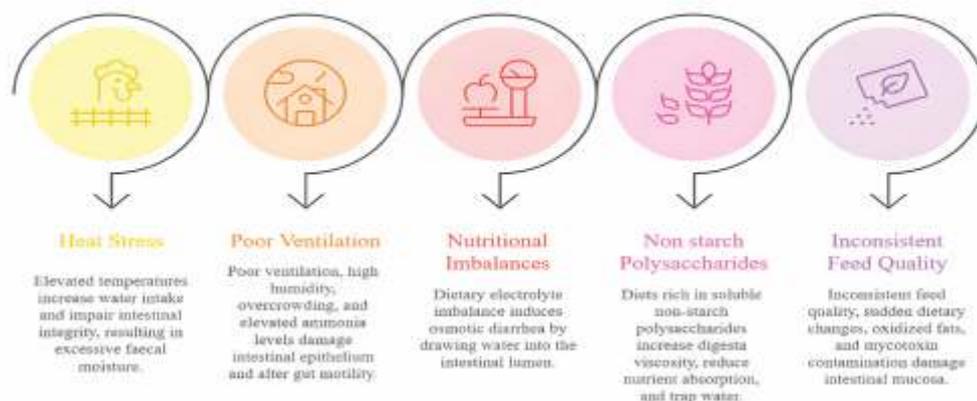
Benefits

- Activates Gut Associated Lymphoid Tissue & improves immunity.
- Improves functional and morphological health of gut.
- Improves digestion through stimulating digestive enzyme secretion.
- Reduces pathogen load by binding and exclusion.

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Non infectious Loose droppings



Inconsistent feed quality, sudden dietary changes, oxidized fats, and mycotoxin contamination damage intestinal mucosa and disrupt the microbiota, causing dysbacteriosis and malabsorption (Dibner & Richards, 2005; Bryden, 2012).

Collectively, these non-infectious factors reduce nutrient utilization, worsen litter quality, and negatively affect poultry performance.

Infectious Causes

Infectious causes of loose droppings in poultry arise from direct damage to the intestinal or renal tissues by pathogens, leading to impaired absorption and excessive fluid loss.

Bacterial infections such as *Escherichia coli*, *Salmonella* spp., and *Clostridium*

perfringens induce enteritis, toxin production, villus destruction, and increased intestinal permeability, resulting in watery or mucus laden droppings (Van Immerseel et al., 2009; Timbermont et al., 2011).

Protozoal infections, especially coccidiosis caused by *Eimeria* species, damage intestinal epithelial cells, causing inflammation, haemorrhage, malabsorption, and watery to bloody droppings (Williams, 2005; Chapman et al., 2013).

Viral diseases also contribute significantly; nephropathogenic strains of Infectious Bronchitis Virus impair renal function and cause polyuria, producing watery faeces, while viscerotropic Newcastle Disease Virus leads to greenish, foamy diarrhoea due to intestinal damage (Cavanagh, 2007; Alexander et al., 2020).

Early diagnosis and pathogen specific control are essential to limit productivity losses.

Prevention and treatment

Prevention and treatment of loose droppings in poultry require an integrated approach targeting environmental management, nutrition, biosecurity, and timely medical intervention.

Prevention

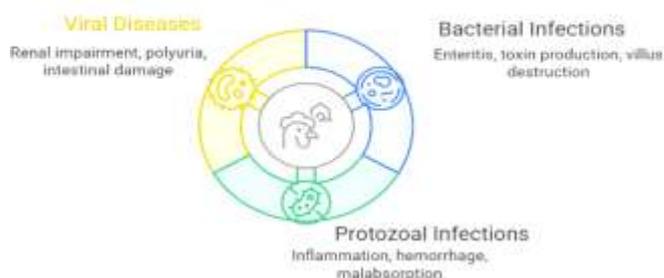
Prevention is the most effective strategy and focuses on maintaining optimal house conditions, including proper ventilation, temperature control, and low litter moisture, as these factors directly preserve gut integrity and reduce stress induced water loss (Dunlop et al., 2016; Yahav, 2009).

Nutritional management is equally crucial; balanced diets with correct electrolyte levels, controlled non starch polysaccharides, gradual feed transitions, and good quality water help prevent osmotic diarrhoea and dysbacteriosis (Choct, 2009; Borges et al., 2004).

Routine use of probiotics, phytogenic, and toxin binders enhances gut microbial balance, improves intestinal barrier function, and mitigates non-infectious loose droppings (Awad et al., 2013; Kogut, 2019).

Probiotics help control non-infectious loose droppings in poultry by restoring gut microbial balance, increasing short chain fatty acid production, and excluding pathogenic bacteria. Species such as *Lactobacillus acidophilus*, *L. casei*, *L. rhamnosus* GG, *Saccharomyces boulardii*, and *Bifidobacterium lactis*

Infectious loose droppings |



MINERALS

- ZINC SULPHATE
- ZINC OXIDE
- FERROUS SULPHATE
- MANGANESE SULPHATE
- MANGANESE OXIDE
- COPPER SULPHATE
- COBALT SULPHATE
- CALCIUM IODATE
- SODIUM SELENITE
- COBALT CARBONATE

VITAMINS

- VITAMIN - E
- VITAMIN - A
- VITAMIN - C
- VITAMIN - K
- VITAMIN - B9

BULK PRODUCTS

- DI CALCIUM PHOSPHATE (DCP)
- MONO CALCIUM PHOSPHATE (MCP)
- SODIUM BI CARBONATE (SBC)

AMINO ACID

- DL-METHIONINE
- L-LYSINE HCL
- L-THREONINE
- L-TRYPTOPHAN

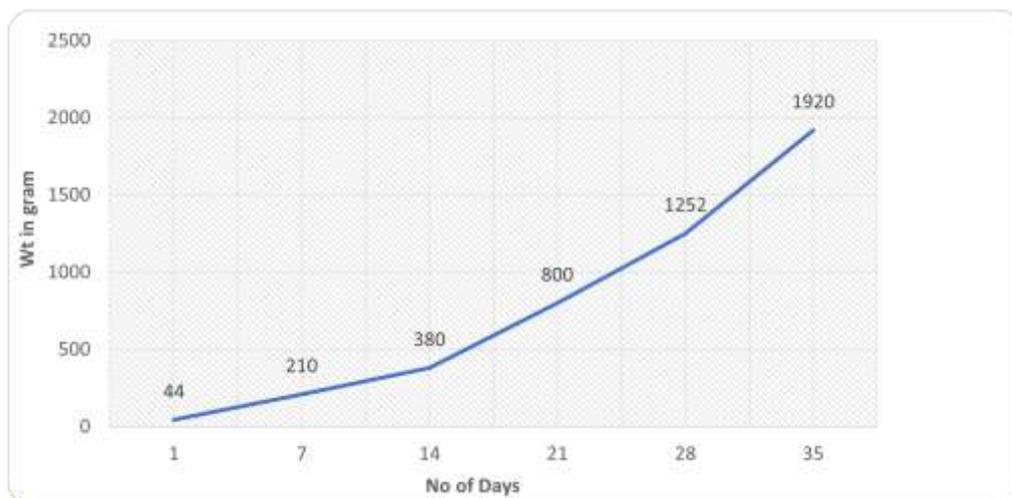
ANTIBIOTICS

- ENROFLOXACIN
- FLORFENICOL
- AZITHROMYCIN
- CIPROFLOXACIN
- AMOXICILLIN
- VIRGINIAMYCIN 11%
- TIAMULIN 10, 45, 80%
- TYLOSIN
- IVERMECTIN



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Fig 1 Effect of DigestAid Supplementation on Body weight of broiler birds

strengthen intestinal barrier integrity, enhance mucin secretion, bind enterotoxins, improve nutrient digestion, and promote water absorption, resulting in firmer droppings and better litter quality (Krysiak et al., 2021; McFarland, 2010; Anjum et al., 2021).

Herbal gut modulators including Kutaja, Bael, and Pomegranate further support gut health through astringent, antimicrobial, and anti-inflammatory actions that reduce intestinal hypersecretion (Kirtikar & Basu, 2014; Jurenka, 2008). In addition, natural adsorbents such as charcoal, bentonite, and zeolite bind toxins, excess ions, and moisture, stabilizing gut function and minimizing wet litter (Huwig et al., 2001; Mumpton & Fishman, 1977).

Treatment

Treatment of loose dropping depends on accurate diagnosis:

- Non-infectious cases respond to corrective nutrition, probiotics,

electrolytes, and stress reduction.

- Infectious cases require etiology specific therapies such as anticoccidials for coccidiosis, antibiotics for bacterial enteritis, and vaccination with supportive care for viral diseases (Chapman, 2014; Timbermont et al., 2011; Saif et al., 2020).

Early intervention and integrated gut health management are essential to restore faecal consistency, improve performance, and minimize economic losses.

Trial Overview

Evaluation of Dietary Supplementation Through Feed on Growth Performance and Reduction of Loose Droppings in Broiler Birds

A field trial was conducted to evaluate the effect of a dietary supplement on growth performance, with particular emphasis on body weight gain and reduction of loose droppings.

At the time of trial initiation, the broiler flock exhibited visible loose droppings, indicating compromised digestive health. The study was conducted under field conditions at a commercial broiler farm in Gopiballavpur, West Bengal.

A total of 11,200 Cobb-430 broiler birds aged 16 days were included. The supplement was incorporated into feed at a dosage of 1 kg per tonne and administered continuously for 10 days during the mid-growing phase. Uniform mixing ensured consistent intake across the flock.

Parameters studied

Production and faecal parameters were evaluated to assess the effect of supplementation.

- Growth performance was assessed using body weight gain as the primary productivity indicator.
- Qualitative evaluation of droppings was conducted

to monitor changes in digestive efficiency and gut health.

Result and Discussion

Production Performance

Following supplementation at 1 kg per tonne of feed, broiler birds showed a consistent increase in average body weight throughout the growing period, reaching optimal market weight by 35 days. The uniform growth pattern suggests efficient nutrient utilization and improved digestive performance.

Fig No.1 Effect of Supplementation on Body weight of broiler birds

Qualitative Evaluation of Droppings

At the start of the trial, birds exhibited loose and watery droppings, indicating

compromised digestive function.

Following supplementation:

- Feed intake improved from Day 1.
- By Day 2, droppings became firmer and more uniform.
- From Day 3 to Day 4, overall flock health and uniformity improved noticeably.
- By Day 6, consistent digestive benefits were evident across the flock.

Post-supplementation, well-formed, dry, and firm faecal matter was observed, reflecting enhanced gut health, improved nutrient utilization, and better overall flock condition.

Conclusion

Supplementation at 1 kg per

tonne of feed demonstrated a positive effect on both growth performance and digestive health in broiler birds under field conditions. Birds initially affected by loose and watery droppings showed marked improvement in faecal consistency following supplementation, indicating enhanced gut function. This improvement was accompanied by steady body weight gain and improved flock uniformity, suggesting better nutrient utilization. Overall, the trial findings indicate that targeted dietary supplementation can be an effective strategy for reducing loose droppings and improving broiler production performance.

Fig 2: loose droppings before start of trial (before 16 days)



Fig 3: Firm and improvement of droppings after DigestAid Supplementation



Image Source: Viscon Group



Beyond Feed: How insect protein startups are unlocking high-value applications in diagnostics & Biotech

by **Ankit Alok Bagaria**, Loopworm

The way we look at insects has fundamentally shifted over the last two decades. What began as a niche conversation about alternative proteins for animal feed and novelty snacks has evolved into a sophisticated frontier for biotechnology. Today, while insect farming for livestock and pets is a proven, commercialised reality with over 50 active global startups, the real leap for this industry lies in high-value biomolecules. The sector is moving away from being a volume-driven

business and becoming a value-driven platform, where insects serve as biological factories for everything from diagnostic reagents to enzymes and regenerative medicine. Scientific validation, existing infrastructure and compelling economics make the timing ideal for innovation.

Insects are not new to the world of food, cosmetics and medicine; we have merely forgotten their historical importance. Ancient Asian medical texts have long detailed how extracts from cockroaches and beetle larvae



can treat respiratory ailments or speed up wound healing. In Latin America, cochineal insect have long been used for natural red dyes for textiles and lipsticks for centuries. Even the nutraceutical world uses bee-derived products, leveraging propolis and beeswax for their antimicrobial properties and utilising them for high-end supplements and skincare.

The current biotech revolution goes much further. Insects are now used as transient or transgenic protein expression systems. Traditional mammalian cell cultures require massive

capital, operational costs, and longer production times. In contrast, insects such as silkworms (*Bombyx mori*), fruit flies (*Drosophila*), and cabbage loopers (*Trichoplusia ni*) offer fast, cost-effective platforms for producing recombinant proteins—a breakthrough at the intersection of entomology and molecular biology.

This has real-world implications. Nearly half the global population lacks access to essential health services, largely because diagnostics are too expensive. In India, the Indian Council of Medical Research has highlighted this gap, pushing the National Essential Diagnostics List to ensure equitable access. Rapid diagnostic tests for diseases like syphilis, hepatitis B, and vector-borne illnesses rely on recombinant proteins, whose high production costs have historically been a bottleneck. Using insects as living bioreactors allows high-quality proteins to be produced at a fraction of the traditional cost, enabling more affordable diagnostics and advancing SDG 3 of universal health coverage by 2030.

Take silkworms: India is the world's second-largest silk producer, and silk is over 98% protein, making silkworms one of the most efficient natural protein producers. Companies like AMSilk have engineered silk proteins for medical

coatings, surgical meshes, and biocompatible scaffolds. Firms like Fibroheal are exploring silk-derived components for haemostatic bandages, demonstrating applications in emergency medicine.

Silkworms' potential extends beyond silk. Startups, including Loopworm, are leveraging silkworm pupae to develop:

1. Sustainable cell culture media, replacing ethically and financially costly Fetal Bovine Serum (FBS)
2. Recombinant proteins for diagnostics and therapeutics

Insect-derived growth factors, albumins, and protein hydrolysates offer high-performance, sustainable alternatives that can significantly reduce R&D costs in biotech and biopharmaceutical industries. Additionally, insects are being explored for specialty enzymes and diagnostic antigens, bridging the gap between animal agriculture and medical innovation.

The future of the insect industry is no longer limited to feed or food. It is about harnessing high-value molecules. Insects are poised to become the new engines of biotechnology, just as vital to laboratories as they have historically been to the loom. At Loopworm, the mission is to prove the humble silkworm's critical role in shaping the next generation of biotech solutions.

India's Maize Paradox: Rising Policy Support but Farmers Struggle with Prices

India's maize sector is at a crossroads, reflecting a stark contrast between government support and ground-level farmer distress. With over 1.69 crore operational holdings engaged in maize cultivation, the crop has become a strategic focus for food security, rural incomes, and coarse cereal expansion, according to the Agriculture Census 2015–16. States such as Bihar, Rajasthan, Madhya Pradesh, Uttar Pradesh, and Karnataka lead in maize area, while West Bengal, Tamil Nadu, Andhra Pradesh, and Telangana record high productivity.

The National Food Security & Nutrition Mission (NFSNM) supports maize cultivation across 28 states and two Union Territories, providing certified seeds, crop protection technologies, integrated nutrient management, and farmer training. Funding for maize and barley has grown to INR 92.57 crore in 2024–25, while the MSP for maize in 2025–26 was increased to INR 2,400 per quintal. Research institutions including ICAR, IIMR Ludhiana, and CIMMYT have developed over 315 high-yielding and stress-tolerant maize varieties between 2014 and 2025, enhancing resilience and productivity.

Yet, despite policy support and research interventions, farmers continue to face severe challenges. In Thoothukudi, Tamil Nadu, maize is being sold at INR 1,500 per quintal, far below last year's INR 2,500 and even below the central MSP of INR 2,435, due to middlemen and trader syndicates. Local farmers, who have expanded maize cultivation to around two lakh acres, have petitioned the State government for procurement, highlighting distress and unfair market practices.

Officials have assured steps to procure maize for ethanol production at Gangaikondan SIPCOT, but the disparity between government initiatives and on-ground realities underscores persistent challenges in translating policy into farmer welfare. The situation exemplifies the larger paradox of India's agriculture: robust policy frameworks and technological progress coexisting with market inefficiencies that leave farmers vulnerable.

Long-Standing Feed and Fodder Issues Continue to Hinder Livestock and Fisheries Growth

Feed and fodder shortages, infrastructure gaps, and dependence on a narrow export basket remain major hurdles

for India's livestock and fisheries sectors, according to the Economic Survey tabled in Parliament on January 29, 2026. Despite these constraints, both sectors have shown strong growth over the past decade.

Between 2014–15 and 2023–24, the livestock sector recorded a compound annual growth rate (CAGR) of 12.77% at current prices, with gross value-added rising nearly 195%. Fish production grew by over 140% during 2014–25, reaching 88.14 lakh tonnes, highlighting the increasing role of allied sectors in boosting farm incomes.

The Survey emphasized that feed and fodder shortages remain the most critical challenge. With only 9.13 million hectares under fodder crops (4.61% of gross cropped area), feed accounts for more than 70% of milk production costs. Studies by ICAR estimate demand-supply gaps of 11–32% in green fodder, 23% in dry fodder, and 28–40% in concentrates, underscoring the need for targeted interventions to ensure feed security.

In fisheries, value addition and processing capacity need rapid expansion to reduce export dependency. Persistent gaps exist in post-harvest handling, cold chains, and logistics, particularly in inland and remote areas. Strengthening aquatic animal health, biosecurity, and quality standards is also critical as production intensifies.

The Survey noted that livestock growth has been supported by indigenous technologies, including artificial insemination (AI). Annual inseminations rose from 76.23 million in 2017–18 to 88.32 million in 2024–25, increasing AI coverage of breedable bovine females from 25% to 40% across 126 districts.

India's Oilmeal Exports Drop 42% in January on Weak Soybean and Rapeseed Shipments

India's oilmeal exports fell sharply in January 2026, declining 42% year-on-year to 2,60,123 tonnes, driven by weaker shipments of soybean and rapeseed meals, according to the Solvent Extractors' Association of India (SEA). In the same month last year, exports had stood at 4,52,352 tonnes.

For the April–January 2025–26 period, total oilmeal exports dropped to 3.2 million tonnes from 3.6 million tonnes a year earlier. Soybean meal exports were down to 1,32,440 tonnes in January 2026 from 2,86,287 tonnes, while rapeseed meal shipments fell to 64,782 tonnes from 1,31,641 tonnes. Groundnut meal exports also declined, dropping to 1,067 tonnes from 2,636 tonnes.

In contrast, ricebran extraction exports surged to 35,367

tonnes from just 63 tonnes in January 2025.

SEA attributed the decline in rapeseed meal shipments to reduced crushing activity, as processors awaited fresh crop arrivals expected in February and March. At Kandla, Indian rapeseed meal was quoted at INR 20,300 per tonne, up from INR 18,500 in November–December 2025, though below the January peak of INR 21,617. In dollar terms, Indian rapeseed meal was priced at USD 235 per tonne, compared with USD 276 per tonne for European Union-origin meal at Hamburg. China, South Korea, Bangladesh, and Germany remain the main buyers of Indian oilmeals. Analysts say the slowdown reflects seasonal crop availability and global market pressures, but demand from key importers is expected to support shipments in the coming months.

SOPA Opposes GM Soybean Meal Imports, Cites Strong Domestic Supply

The Soybean Processors Association of India (SOPA) has urged Commerce Minister Piyush Goyal to reject the poultry industry's request to import genetically modified (GM) soybean meal. SOPA emphasized that India's domestic soybean supply is sufficient and importing would adversely affect millions of local farmers.

The poultry sector has cited rising domestic prices as justification for imports. However, SOPA countered that price increases are primarily driven by raw material costs and international soybean oil rates, not supply shortages. Prices at the Indore market, for instance, have risen sharply over the past year due to these factors.

For the 2025-26 marketing year, SOPA reported that India's soybean stocks remain robust, with carryover quantities adequate to meet both domestic demand and export commitments. The association warned that allowing imports could trigger unnecessary foreign exchange outflows and increase dependency on external markets, similar to the edible oil sector.

SOPA called on the government to protect the interests of domestic farmers by maintaining its current stance against GM soybean meal imports, underscoring the need to prioritize local agriculture over short-term industry demands.

EW Group to Invest INR 200 Crore to Expand Layer Chick Supply in India

Germany-based agribusiness EW Group plans to invest INR 200 crore in India's poultry sector over the next three years

through its newly formed subsidiary, Lohmann Layers India. The company, a global leader in animal genetics, established the Indian arm via its subsidiary International Layer Distribution (ILD) by acquiring JK Breeders Pvt Ltd for an undisclosed amount.

"India is one of the world's fastest-growing poultry markets. Establishing Lohmann Layers India reinforces our long-term commitment to Indian farmers," said Antonio Paraguassu, managing director for Asia and Australia at ILD.

EW Group has operated in India for over 15 years through a franchise model with JK Breeders. With the new structure, it will work directly in the market, according to Surendra K Jangir, managing director of Lohmann Layers India. The company plans to invest INR 200 crore over three years to expand its breeding and distribution operations.

Lohmann Layers India will oversee the commercial distribution of day-old chicks nationwide and aims to establish breeding capacity for 400,000 parent layer birds to supply 30 million day-old chicks annually. The company also intends to set up incubation centres across India, focusing on breeding technology and modern infrastructure.

Currently holding 6–7% market share, Lohmann Layers is targeting a 20% share of India's layered chick replacement market. The company competes with domestic poultry players such as Venky's, Skylark, and Hyline in the day-old chick segment.

This investment underscores EW Group's commitment to strengthening India's poultry industry while introducing advanced breeding technologies and expanding the supply of quality chicks for commercial poultry production.

U.S. Farmers to Plant More Soybeans, Less Corn in 2026 Amid Market Pressures

U.S. farmers are set to increase soybean plantings and scale back corn acreage in 2026, according to the U.S. Department of Agriculture (USDA), even as both crops are expected to produce near-record harvests. Corn plantings are projected at 94 million acres, down from an 89-year high of 98.8 million acres in 2025, while soybean acreage is forecast to rise to 85 million acres from 81.2 million acres last year.

Growers face challenges from global oversupply, weak crop prices, and rising input costs for seeds and fertilizer. Despite near-record government payments, which are expected to account for nearly 29% of farm revenue, U.S. farm income is projected to decline 0.7% in 2026.

Many Midwest farmers rotate corn and soybean crops to maintain soil health, but some fields may deviate from

tradition if soybean profits appear more attractive. Analysts noted that low corn prices and abundant 2025 harvests have discouraged further expansion, though strong demand from exporters and ethanol producers may limit the decline. Soybean acres are rising due to robust domestic demand for soy oil for renewable fuels, even amid trade tensions with China and competition from Brazil's likely record harvest. Assuming normal weather, USDA forecasts the 2026 corn harvest at 15.755 billion bushels and soybeans at 4.450 billion bushels. Ending stocks are projected at 1.837 billion bushels of corn and 355 million bushels of soybeans. Corn exports are expected to fall to 3.1 billion bushels, while soybean exports rise to a two-year high of 1.7 billion bushels, supported by strong processing demand.

Meanwhile, U.S. wheat stocks are expected to remain nearly unchanged at 933 million bushels, with exports slightly down to 850 million bushels due to competition from bumper crops in Argentina and Australia.

Kerala to Launch High-Tech Centre for Indigenous Cattle Breeding and Milk Self-Sufficiency

The Kerala Livestock Development Board (KLDB) is establishing a Centre of Excellence for Advanced Technologies in Bovine Production and Research (ATBPRC) at its Kulathupuzha farm in Kollam, aiming to make Kerala a national hub for indigenous cattle breeding and achieve milk self-sufficiency. The State currently faces an annual milk shortfall of around 5.96 lakh tonnes.

The project, already underway, includes climate-resilient cattle sheds to house 100 elite cows, forming the core of a sophisticated breeding and research ecosystem. KLDB Managing Director R. Rajeev highlighted that the centre will focus on producing female-only calves through indigenous sex-sorting technology developed in collaboration with IISER Thiruvananthapuram. This approach is expected to expand the high-yielding bovine population while reducing the birth of unproductive male calves.

The ATBPRC will also develop cost-effective extenders for deep-frozen semen to support both bovine and caprine breeding programmes. Environmental sustainability is a key focus, with the use of Harit Dhara and Tamarin Plus feed supplements from ICAR, shown to cut enteric methane emissions by up to 20%.

A nucleus farm will host 200 animals, using sex-sorted semen

for IVF to produce 1,750 embryos annually. While 300 will remain on-site, 450 will be transferred to farmers via mobile units and 1,000 sold to other States, positioning Kerala as a hub for bovine genetics.

The centre will collaborate with the University of Calgary, Canada, to train over 2,000 technicians and farmers in assisted reproductive technologies and fertility management. Advanced diagnostic services aim to raise the average milk yield of crossbred cows from 10.79 kg to 13.5 kg per day by 2031, boosting productivity and fostering a technology-driven dairy sector in the State.

Indian Firm Secures USD 4.5 Million for Mega BSF Facility

Elementoz Research Pvt. Ltd. has raised USD 4.5 million in its first seed funding round to expand insect-based protein production and promote antibiotic-free animal nutrition. The investment, supported by angel investors from India and Norway, will fund the establishment of India's largest Black Soldier Fly (BSF) protein manufacturing plant.

Starting in January 2026, the facility is expected to process nearly 2,000 metric tons of industrial byproducts each month. Designed to meet global cGMP standards, the plant will incorporate advanced automation to ensure consistent quality and scalability.

Founded in 2022 by Dr. Jayashankar Das and Dr. Padmaja Mohanty, the company operates at the intersection of biotechnology and precision animal nutrition. Its proprietary platform integrates genomics, proteomics, and automated manufacturing to create next-generation functional feed ingredients.

Elementoz markets its products, including antimicrobial peptide-based premixes, insect-derived proteins, and functional oils. These solutions enhance gut health, improve feed conversion efficiency, and strengthen disease resistance in poultry, aquaculture, and pet food sectors. Importantly, they provide a sustainable alternative to antibiotic growth promoters, addressing rising concerns around antimicrobial resistance.

By converting organic waste into high-quality protein through insect bioconversion, the company reduces land and water usage while lowering carbon emissions. The model also supports India's efforts to reduce dependence on imported feed additives.

With fresh capital in place, Elementoz aims to accelerate research, expand manufacturing capacity, and position India as a global hub for sustainable, next-generation feed proteins.

ANIMAL FEED SUPPLEMENT

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AMINO ACID

- DL-Methionine
- L-Lysine Hcl
- L-Threonine
- L-Tryptophan
- L-Valine
- L-Isoleucine

FEED SUPPLEMENT

- Choline Chloride (CCL)
Liquid 75% / Powder 60%
- Toxin Binder
- Betain Hcl
- Acidifier
- Phytase
- Multienzyme
- Electrolyte
- Glycerine

PROMOIS ANTIBIOTICS

- Chlortetracycline (CTC)
- Tylosin Phosphate 10%
- Tiamulin 10,45,80%
- Enrofloxacin
- Florfenicol
- Azithromycin
- Ciprofloxacin
- Amoxicillin
- Virginiamycin 11%
- Ivermectin
- Anticoccidials

BULK PRODUCTS

- Di Calcium Phosphate (DCP)
- Monocalcium Phosphate (MCP)
- Sodium Bicarbonate
- Premix (Layer)
- Premix (Broiler)

VITAMINS

- Vitamin - A
- Vitamin - E
- Vitamin - C
- Vitamin - B1, B2, B9
- Vitamin - K



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MORE THAN
90 YEARS
OF FEEDING
THE FUTURE**



For producers

Empowering producers to make the most out of their resources.



For the planet

Joining forces to efficiently produce the best quality meat, eggs and milk from the existing resources.



For everyone

Setting for ourselves the ambitious goal of feeding 9 million people by 2050.

Our Innovative Products Range

TOXO[®]-XL | **TOXO[®]** | **TOXO[®]-MX** | **Fylax[®]** | **Fysal[®]**

Selko[®]-pH | **Selacid[®] GG** | **Fytera Perform**

IntelliMin | **IntelliOpt** | **Optimin[®]** | **IntelliBond[®]**

Trouw Premixes | **maxcare**



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