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think Grain think Feed

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Monthly Magazine for Feed Industry

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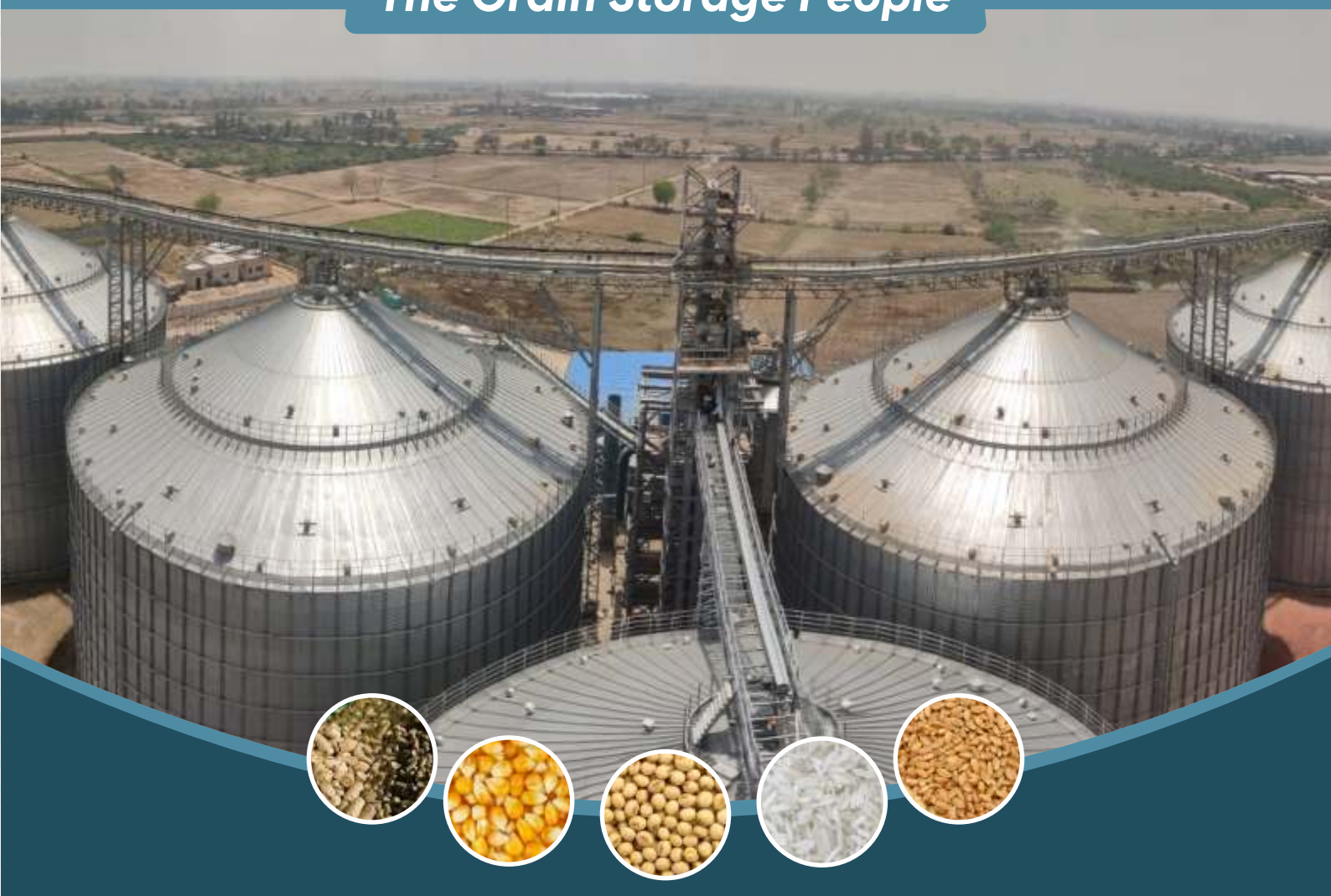

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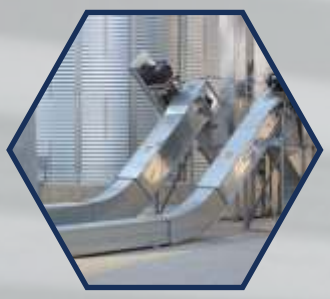

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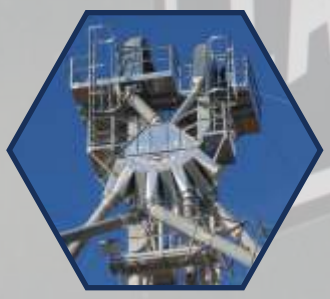

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ICAR-CIBA and BRC Marine Collaborate to Evaluating Rice DDGS in Shrimp Feed

Image Source: IFB Agro

The Indian Council of Agricultural Research-Central Institute of Brackishwater Aquaculture (ICAR-CIBA) has signed a Memorandum of Understanding (MoU) with BRC Marine Products to evaluate rice distillers' dried grains with solubles (DDGS) as an alternative protein source in shrimp feed. This partnership aims to assess the potential of rice DDGS as a sustainable and cost-effective option for shrimp nutrition.

Rice DDGS, a by-product of alcohol production, is rich in protein, fat, vitamins, and phosphorus. Traditionally used in poultry and cattle feed, it is now being explored for aquaculture. The initiative seeks to replace more expensive protein sources, such as soybean meal, with rice DDGS, which provides essential amino acids and vitamins for shrimp growth.

Dr. Kuldeep Kumar Lal, Director of ICAR-CIBA, emphasized the need for sustainable protein alternatives to meet the growing demand for shrimp production while reducing environmental impact. S.N. Yadav, representing BRC Marine Products, highlighted that incorporating rice DDGS into shrimp feed could help lower feed costs and support the industry's shift towards more sustainable practices.

This collaboration is expected to benefit the Indian aquaculture sector by reducing reliance on traditional feed resources and promoting the use of locally available by-products. Both ICAR-CIBA and BRC Marine Products are hopeful that this project will lead to innovative solutions in aquaculture nutrition.

Source: ICAR

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Poultry Intestinal Health: Are We Addressing the Right Areas?

Dr. Satyam Sharma, Dr. Venkat Shelke, & Dr. Chandrasekar S., Kemin Industries South Asia

Dr. Satyam Sharma

Dr. Satyam Sharma (M.V.Sc. in Animal Nutrition) is responsible for the 'Intestinal Health' portfolio at Kemin Industries South Asia. His core area of specialization is bringing relevant innovations and insights in poultry intestinal health from the lab to the field, tailored to the specific needs of the subcontinent.

Introduction

Indian poultry production standards have improved by leaps and bounds in the past decades, a tribute to continuous genetic development, precise nutritional formulations, and improved management practices. However, one issue that has lately gained significant attention from producers is the contraction in profit margins experienced across the categories: Broiler, Breeder, and Layers. This calls for continuous improvements in production efficiency for profitable enterprises, and undoubtedly, the path to this improvement goes through an 'efficient gut health' management program. 'Gut Health,' a term that emerged about a decade and a half ago in the poultry landscape, today holds more significance than ever before.

In the current context, producers are facing a double whammy to sustain. On one side, the input factors, particularly the major conventional raw materials, are showing dynamic pricing trends, with associated challenges of availability and desired quality. On the other side, price realization is equally dynamic, eventually putting the producer in a tight spot. The situation becomes even more complicated due to the prevalence of subclinical infections, mycotoxin contamination, deteriorating water quality, and erratic environmental fluctuations.

Does this situation relate to the gut health of our birds? Definitely, yes. The changing trends in formulations, with

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higher and more diverse usage of unconventional raw materials, increased nutrient demands from birds, and the direct impact of diseases and the environment on poultry gut health, all require attention to specific areas that are impacting our birds' gut health today. This calls for a sharp focus on the evolving challenges of poultry gut health.

Dr. Venkat Shelke

Dr. Chandrasekar S.

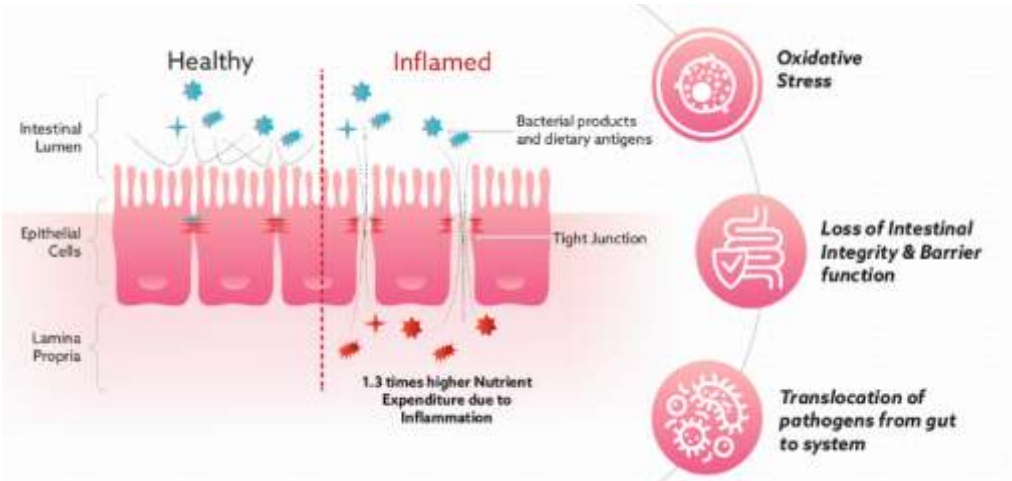
Impending Challenge: Dual Threat of Necrotic Enteritis and Chronic Gut Inflammation (CGI)

Conventionally, Clostridium perfringens has been attributed to the causation of Necrotic Enteritis (NE) (primarily subclinical, causing a loss of Rs 4-5 per bird), along with Eimeria species, as the primary reasons for gut-associated challenges. However, today the situation is more complicated than just NE due to the higher intensity of predisposing factors for NE, attributed to increased gut stressors. Consequently, increasing gut stressors continue to directly impact the bird by causing chronic intestinal inflammation, resulting in an additional loss of Rs 2-3 per bird. This impact of chronic intestinal inflammation is largely due to the increased demand for nutrients by the bird with chronically inflamed intestines.

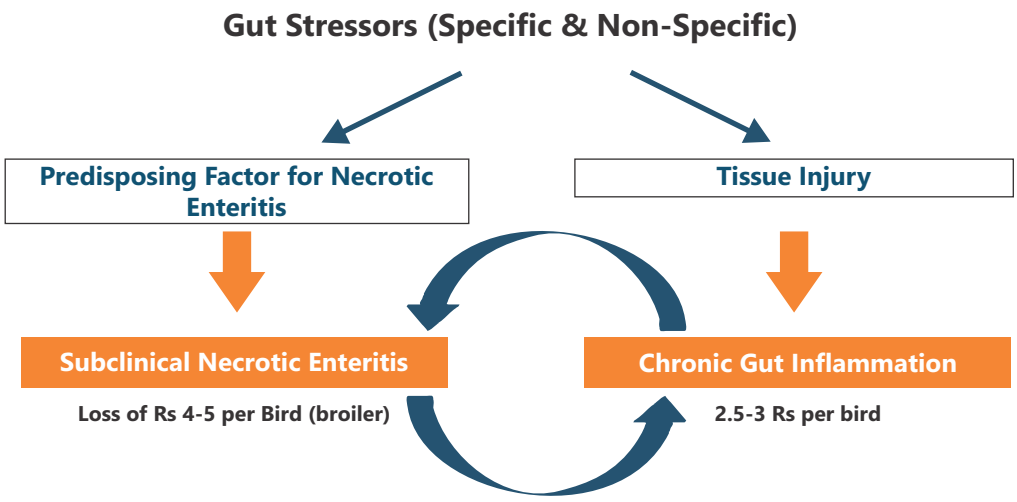
Inflammation is the body's response to any tissue injury. This becomes problematic from a producer's standpoint when the response is undesired and exceeds the required level. In fact, when this response or inflammation of the intestines becomes a regular feature, often undesirable, it is termed low-grade 'Chronic Intestinal Inflammation.' The response comes at the expense of about 0.27 g of ideal protein per bird per day (Sandberg, F. B. et al., 2007; Klasing, K. C., 2007) when measured in simulated models. Translating commercially, the losses

Evolving factors Impacting Poultry gut

- Higher and more diverse use of unconventional raw materials
- Nutrient intensification of diets
- Subclinical pathogens (including viruses)
- Varying water quality
- Environmental fluctuations



Sources: Sandberg, F. B., Emmans, G. C., &Kyriazakis, I. (2007); Klasing, K. C. (2007)



could be estimated at about 60g of feed lost per broiler bird.

Undesired intestinal inflammation weakens gut integrity, aggravates dysbiosis, promotes the translocation of pathogens from the gut into the system, and importantly, puts the gut under oxidative stress, further compromising the immune function associated with the gut.

Gut Stressors for NE & CGI (Chronic Gut Inflammation)

Gut stressors' are factors that induce injury in the intestine, which serves as both a cause for the further proliferation of Clostridium perfringens (acting as a predisposing factor for NE) and simultaneously results in intestinal inflammation, causing a direct loss of profitability. Broadly, these can be segregated into specific and non-specific causes.

Specific Factors

The pathogens harbored in the gut, both clinically and subclinically, inflict an inflammatory response and act as specific gut stressors. The increasing prevalence of bacterial and viral pathogens poses a challenge to address.

Non-specific Factors

These are the hidden challenges that are generally overlooked as substantial reasons for causing or aggravating gut health issues. Dietary factors are the major 'gut stressors' that contribute to chronic gut inflammation (CGI) in poultry. The use of higher and more diverse alternative raw materials, combined with higher diet densities and challenges in raw material quality, could be considered the overall reasons. However, when narrowing it down to specific aspects of poultry diets, the following emerge as major factors contributing to dietary gut stress.

Dietary "Gut Stressors"

1. **Non-Starch Polysaccharides (NSP)**

   These are largely the soluble fraction of carbohydrates that increase viscosity and form 'hydrocolloids' that cover feed ingredients. Higher digesta viscosity increases the proliferation of gut pathogens like E. coli and Clostridium perfringens, increasing inflammation in the gut.

2. **Mycotoxins and Pesticide residues**

   Apart from systemic effects, mycotoxins, even at low levels, damage the intestinal epithelium, induce oxidative stress, and damage junction proteins. Pesticide residues have remarkable cytotoxic effects that complicate the mycotoxin challenge. This damage induces inflammation in the gut, decreases absorption, and causes leaky gut.

   Major responsible mycotoxins: Aflatoxin B1 (AFB1), Ochratoxin A (OTA), Fumonisins, and Trichothecenes.

3. **Proteins & Oxidized Lipids**

   Higher protein intake is correlated with inducing inflammation in the gut. Putrefactive fermentation, facilitated by higher protein, can produce metabolites such as ammonia and hydrogen sulfide, which have toxic effects on cells. Higher protein from animal-based sources comes with a

The major infectious challenges of gut to look out for:

- Subclinical Enteric Infections
- Coccidia (Eimeria spp.)
- Clostridium perfringens
- E. coli
- Salmonella spp.
- Enteric Viral Challenges

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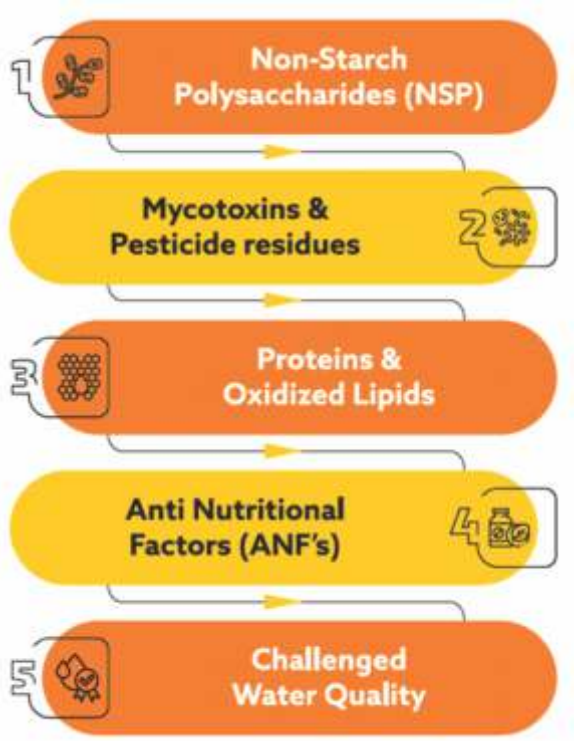

high glycine content that promotes Clostridium perfringens growth (Necrotic Enteritis), which is highly inflammatory. Poor-quality and oxidized lipids containing peroxide components can damage the gut, resulting in injury and inflammation.

4. **Anti Nutritional Factors (ANF's)**

Many ANFs, such as enzyme inhibitors present in diets over time, are believed to disrupt digestive metabolism and possibly induce subsequent tissue injury. Higher usage of alternative raw materials and challenged raw material quality indicate the need for a cautious approach to keep gut inflammation in check due to ANFs.

Water Quality as "Gut Stressor"

Often an ignored aspect, deterioration in water quality serves as a definite 'gut stressor.' By and large, the impact can be classified into two areas. Firstly, due to the pathogenic load that varies because of management conditions, geography, and seasons, and is heavily influenced by water sanitation practices at the farm level. Secondly, the chemical properties of water (pH and hardness) significantly impact the birds directly by influencing normal physiology, but more importantly, by reducing the effectiveness of the water sanitation program in place. An estimate suggests that currently, the average pH and hardness of water used in poultry farms across India are 7.5 and 650 ppm, respectively, with values soaring as high as pH 8.6 and 1200 ppm in certain regions that have developed into intense pockets of the poultry industry.

Environmental "Gut Stressors"

Erratic fluctuations in the environment, lacunae in management, and intensified production conditions like high stocking densities create oxidative stress and associated gut inflammation.

Paving Further Course in Gut Health Management

Poultry gut health is definitely multifactorial and dynamic, and with time, its management is becoming even more complicated. Now, the influence of gut inflammatory factors is becoming increasingly important, alongside conventional pathogens. But how can we actually identify gut inflammation in commercial flocks? One such approach would be to explore the use of biomarkers. Biomarkers, which are chemicals released due to a damaged gut and can be identified in blood, feces, etc., could provide a broader picture of gut health, along with intestinal lesion scoring. The utilization of relevant biomarkers for commercial conditions and taking appropriate measures accordingly can be a strategy to ensure optimal gut health in poultry.

Moreover, from the perspective of gut health management, it is extremely important to take a holistic view and develop a specific gut health assurance program based on the producer's needs. This program should focus on the regular monitoring of specific factors affecting the gut and dynamically design strategies to mitigate the challenges. It is imperative to have an in-depth understanding of factors impacting gut health, ranging from raw materials, gut pathogen prevalence, water quality, rearing environment, and associated specific and non-specific causes that influence poultry gut health. Eventually, implementing the correct solutions through specific additives against prevalent gut pathogens and addressing factors that aggravate gut challenges (predisposing factors) could pave the way forward.

Detailed references are available upon request.

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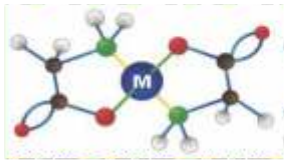

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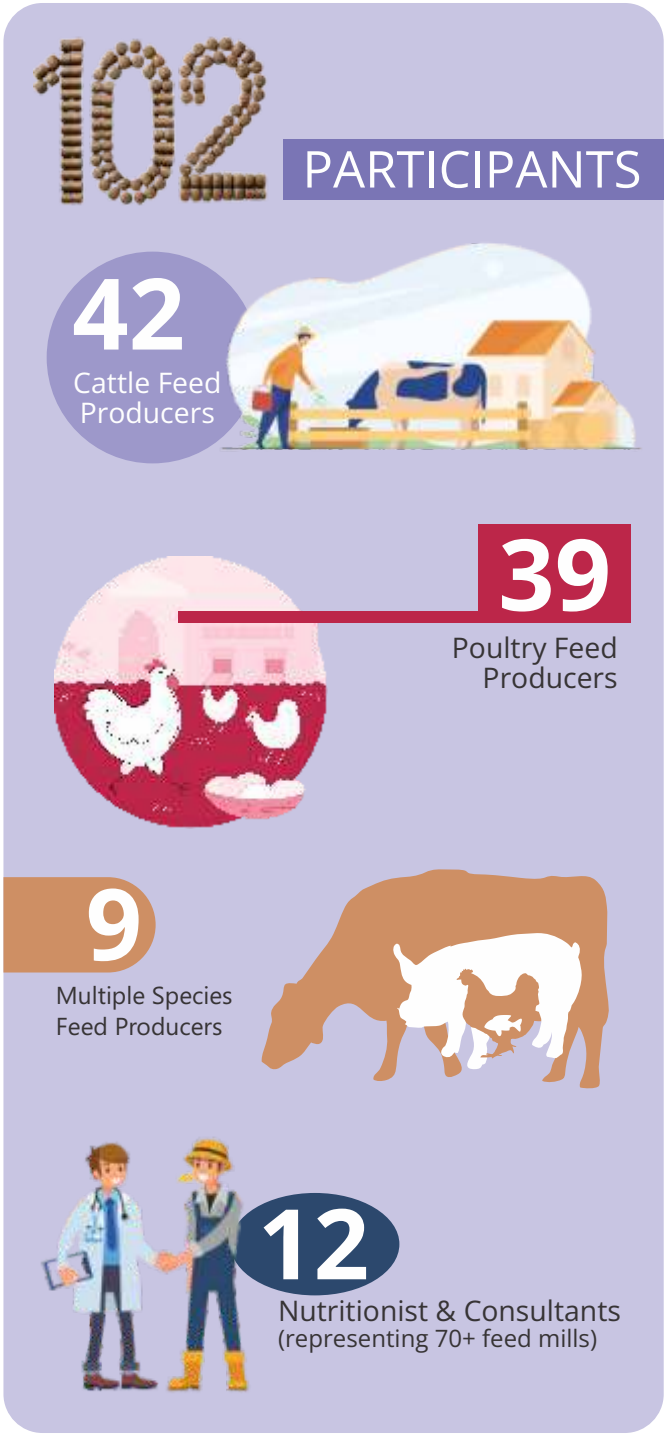
INDIAN FEED SURVEY



Think Grain Think Feed has completed its 4th Indian feed survey with 102 participants, including 42 cattle feed producers, 39 poultry feed producers, 9 producers of feed for multiple species (including aquaculture and swine), and 12 nutritionists or consultants, representing more than 70 feed mills. The total monthly production capacity is 2.1 MMT, with an average utilization rate of over 80%. This year, we further engaged with some participants to gain a deeper understanding of the challenges, opportunities, and potential solutions for feed millers.

Summary

- **34** respondents mentioned an increase in maize usage, while **23** reported a decrease, and the rest used the same maize quantity in formulations.
- Maize usage increased by **8.3%** among players manufacturing **1.13 MMT** of feed per month and decreased by **9.8%** among those manufacturing **0.18** MMT
- **35%** of respondents preferred broken rice as an alternative energy source, followed by **27%** who preferred pearl millet *(bajra)* and sorghum *(jowar)*, while the rest opted for multiple other options.
- A maximum of **1000** samples per month analysed for mycotoxin testing.
- Vitamins became the most volatile additive of the year with **41%**, followed by amino acids at **37%** and trace minerals at **11%**, with others trailing behind.
- **57%** of respondents predicted maize to be the most volatile ingredient in Q1 2025.
- Only **16%** of feed millers made large-scale purchases.
- More than **70%** of customers using Indian machinery reported being satisfied or very satisfied.

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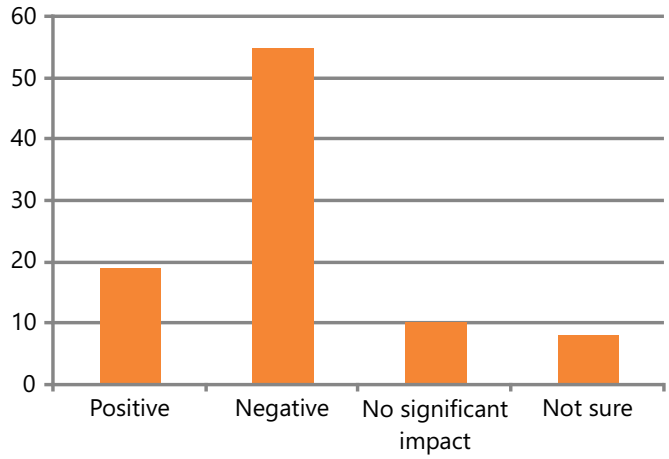
Changes in Maize Usage

Maize remains a cornerstone of feed formulations in India, with most participants indicating either stable or increased usage. This highlights maize's resilience as a preferred energy source despite fluctuations in its price and availability. However, the absence of a significant decrease suggests that alternative energy sources are complementing rather than replacing maize. Additionally, quality remains a top concern for the industry.

Alternate Energy Source Preferences

Indian feed manufacturers are diversifying their energy sources to mitigate costs and manage supply chain risks. Alternatives such as broken rice, wheat, and bajra are gaining traction across different regions, reflecting India's agricultural diversity and the industry's focus on cost-effective feed solutions. This shift highlights the need for policies that support the cultivation of alternative grains to meet the growing demands of the feed industry.

How has ethanol production impacted the feed industry?



EXPERTS'

"We increased our maize usage by 10-12%, and we were able to source good-quality maize through our partnership with farmers through Tata Trust supported organisations working for women empowerment.

JB Singh
Eva Feeds

"It's high time the government performed a balancing act, ensuring a level playing field for the ethanol and poultry industries, opening import windows more frequently during domestic crop shortages, and controlling artificial price escalation by imposing stockpile limitations on traders.

Dr. S. Ramamoorthi
Krishi Nutrition

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OPINION

"DDGS had positively impacted the industry as maize could not be stockpiled to create panic in the market. But melamine contamination in soybean meal and chemical contamination in maize are major challenges that need strict intervention.

Dr Manojkumar R
Suguna Foods

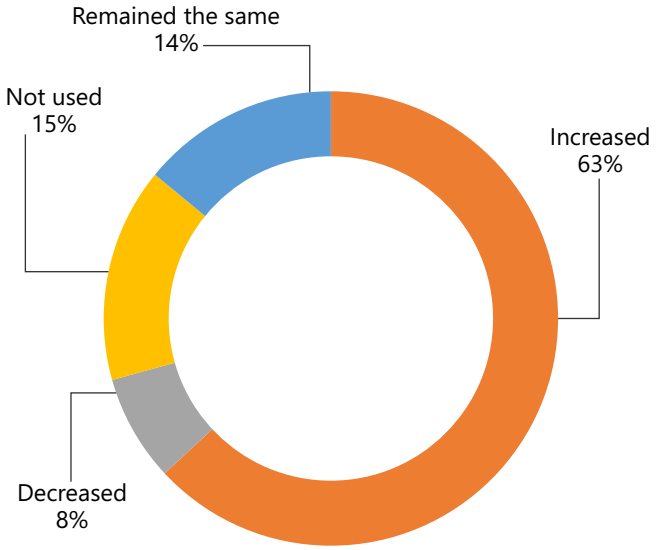
"In India, grains like maize is used for ethanol, are often contaminated with aflatoxins-harmful toxins that don't break down during processing. These toxins get concentrated in the by-product, DDGS, which is fed to dairy animals and can be extremely dangerous.

Ritu Agarwal
Gyandhara Industries

Impact of Ethanol Production

A majority of respondents emphasized the negative impact of ethanol production, primarily due to increased competition and rising maize prices. In India, the government's ethanol blending program, though beneficial for green energy initiatives, has posed challenges for feed manufacturers. Balancing the demands of the energy and feed sectors is crucial to prevent disruptions in livestock productivity and profitability.

How has DDGS usage in your feed formulations changed?

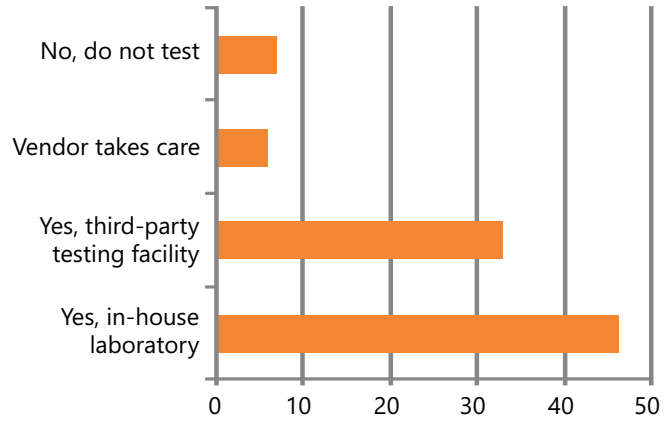


DDGS Usage Trends

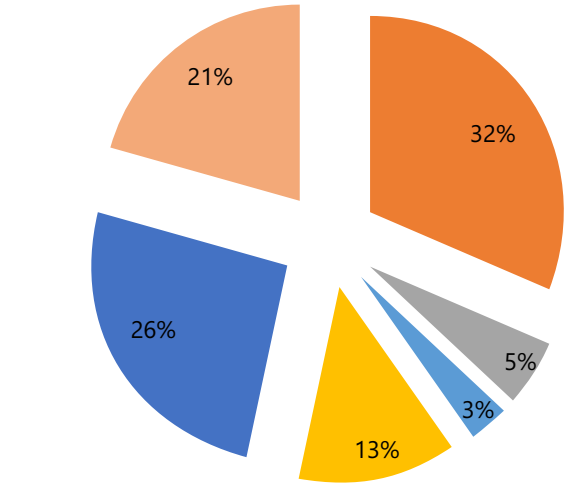
The increasing use of DDGS (Distillers Dried Grains with Solubles) aligns with India's emphasis on protein-enriched feed formulations. As a byproduct of ethanol production, DDGS offers a dual advantage: meeting protein requirements while repurposing industrial byproducts. Moving forward,

it is essential for ethanol manufacturers to prioritize DDGS quality by investing in dryers and ensuring a consistent supply of high-quality raw material for the feed industry.

Do you test your feed raw materials for mycotoxins, and if so, what kind of facility do you use?



Which method do you use for mycotoxin testing?



- Enzyme-linked immunosorbent assay (ELISA)
- Gas chromatography (GC)
- Lateral flow
- Near-Infrared Spectroscopy (NIR)
- High-performance liquid chromatography (HPLC)
- Others

Mycotoxin Concerns

Mycotoxin contamination presents a significant threat to feed safety and livestock

"The diversion of maize for ethanol production had a positive impact on the availability of DDGS, which subsequently influenced the pricing of other raw materials such as DORB and mustard DOC reduced by 12-15%.

Sandeep Badjatiya
Bharat Feeds & Extractions ltd

"We have observed better acceptability of cattle feed among farmers in Maharashtra, with approximately 5% of farmers whose animals produce 10 liters or more per day, feeding 6-7 kg of cattle feed, while the rest, with animals producing 4-6 liters per day, feeding 3-4 kg of feed.

Dr V D Patil
Mahalaxmi Cattle feed Plant
Kolhapur (Gokul)

"Supply-demand balance is the key to success.

Dr. Siddhu Pawar
Noveltech Feeds

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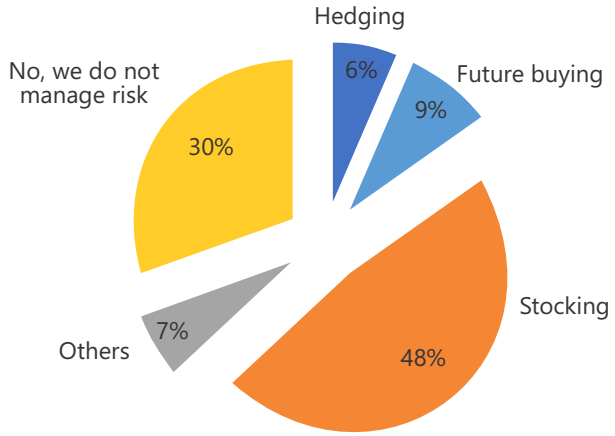
health in India, particularly in humid regions susceptible to fungal growth. The survey reveals increasing awareness among manufacturers regarding mycotoxin risks, with the majority either maintaining in-house testing facilities or utilizing third-party testing services. Continued research and education on mycotoxin management are crucial to minimizing contamination and ensuring both feed safety and, ultimately, food safety.

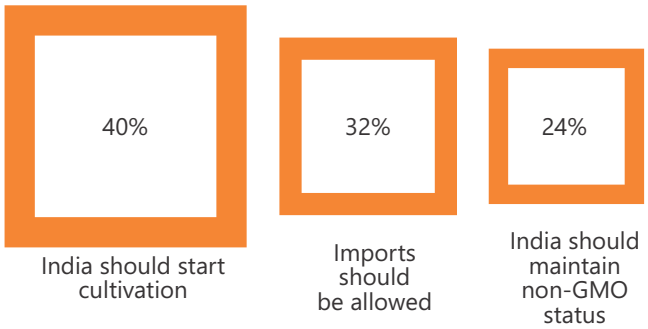
Do you manage risk? If yes, then by which method?



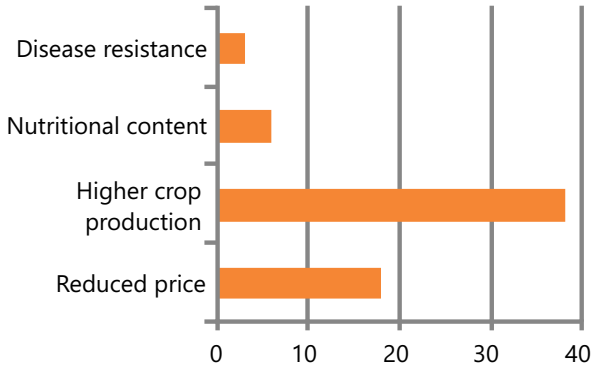
Risk Management in Feed Production

The Indian feed industry faces multiple risks, including supply chain disruptions, raw material shortages, and price volatility. Effective risk management strategies, such as diversifying raw material sources, securing contracts with reliable suppliers, and adopting predictive analytics, are essential. Integrating risk assessment tools can help manufacturers anticipate challenges and adapt quickly, ensuring continuous production and sustained profitability.

What is your opinion on GM crops?



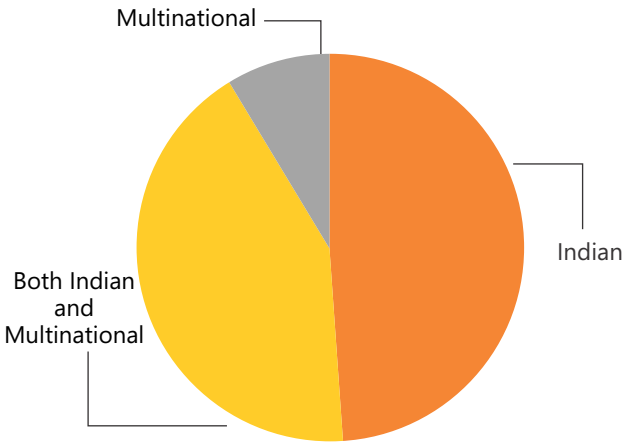
If you are in favor of GM crops, select your reason



GM Crops Preferences

Opinions on GM crops in India remain divided. While a majority of respondents highlight benefits such as higher yields and cost reductions, others express concerns about environmental and ethical implications, as well as doubts about achieving the anticipated improvements in crop yields or price reductions. Given India's heavy reliance on agriculture, the government's stance on GM crops will be pivotal in shaping the future of the sector.

Which origin technology are you using in your feed mill?



Satisfaction with Feed Mill Technology

High satisfaction levels with both Indian and multinational feed mill technologies reflect India's gradual modernization of feed production facilities. However, continued investment in automation and precision technologies could further enhance efficiency and competitiveness. Indian manufacturers must capitalize on adopting newer technological innovations to capture India's evolving livestock sector and sustain growth.

Report Highlights Feed and Fodder Management as Key to Sustainable Dairying in India

A recent report titled "India's Dairy Future: Aligning Livelihoods, Growth, and Climate Solutions", jointly published by the Confederation of Indian Industry – Jubilant Bhartia Food and Agriculture Centre of Excellence and the Environmental Defence Fund, underscores the critical role of feed and fodder management in sustainable dairying.

Image Source: Digestive Quotient - Vashirvaad

With over 80 million dairy farmers in India, most of whom are smallholders, simple and affordable interventions can significantly improve productivity and reduce environmental impact. Key recommendations from the report include:

- **Innovative Feed Practices:** Adoption of balanced diets, silage feeding, and climate-resilient forage crops like maize, sorghum, bajra, and napier to address fodder shortages and enhance livestock productivity.
- **Manure Management:** Practices like composting, biogas production, and timely drying of manure to reduce methane emissions and generate renewable energy.
- **Sustainable Supply Chain Solutions:** Solar-powered cold storage, circular packaging, and water-saving technologies to lower emissions and improve efficiency.
- **Breeding Management:** Indigenous production of sex-sorted semen, Embryo Transfer Technology, and conservation of native breeds using genomic tools to enhance genetic diversity.

The report also highlights the potential of precision dairy farming technologies, such as automated milking systems and climate-resilient sheds, to improve efficiency. However, their high cost remains a barrier for smallholders, necessitating the development of affordable solutions.

Call for Collaborative Efforts

The report concludes by emphasizing the need for coordinated action among government agencies, industry stakeholders, and research institutions to overcome challenges and scale sustainable practices. Supporting smallholder farmers with resources and training will not only enhance productivity but also align India's dairy sector with national climate goals. This approach, the report asserts, will ensure a more sustainable future for India's dairy industry while improving farmer livelihoods and meeting consumer expectations for environmentally responsible practices.

Source: The Businessline

India Celebrates the Legacy of Dr. B. V. Rao

For the fourth consecutive year, India celebrated National Chicken Day on November 16, commemorating the contributions of Padmashree Dr. B. V. Rao, widely regarded as the father of modern Indian poultry.

The occasion witnessed enthusiastic participation from the poultry industry, local businesses, and communities nationwide. Retail outlets offered exclusive promotions, including discounts on chicken and complimentary egg supplies. Notably, approximately 900 shops across the country provided special discounts and free eggs alongside chicken purchases on National Chicken Day to promote greater poultry consumption, said Vasanthkumar C. Setty, Convenor of the Pan India Broiler Coordination Committee.

Prominent poultry associations from states such as West Bengal, Chhattisgarh, Maharashtra, Karnataka, and Assam, along with North India Broiler and Venkys India, joined in the celebrations. Their collaborative efforts underscored the day's significance in promoting the poultry industry and fostering community engagement.

National Chicken Day continues to grow in prominence, serving as a tribute to Dr. B. V. Rao's enduring legacy and as a celebration of the poultry industry's vital role in India's economy and food security.

Impact of Maize Shift to Ethanol Production on Poultry, Sugar, and Soybean Industries

India's push to produce ethanol from maize, intended to reduce dependence on crude oil imports and lower carbon emissions, has had unexpected consequences. While ethanol-blended petrol was meant to reduce the carbon footprint, the diversion of maize for biofuel production has caused significant ripple effects across various sectors, including poultry, cooking oil, and sugar.

The Poultry Industry's Struggles

Maize has long been a key ingredient in poultry feed, and its increasing use for ethanol production is now threatening the poultry sector. India's poultry industry consumes around 60% of the country's maize, with the rest used for livestock feed, starch, and beverages. However, the ethanol sector's growing demand for maize has led to a severe shortage of the grain for poultry feed.

Dr. KG Anand, General Manager of Venkateshwara Hatcheries (Venky's), explains that the use of maize for ethanol rose sharply from 1 million tonnes in 2022-23 to 7 million tonnes in 2023-24, with projections reaching 13 million tonnes by 2024-25. This surge in demand has led to a 20% rise in maize prices, reaching INR 26 per kilogram in 2024, with prices spiking above INR 30 during peak periods. To mitigate losses, poultry farms have been passing these costs onto consumers, pushing up chicken prices. Anand warns that if maize prices rise further and the cost of soybean meal increases, they may be forced to cut chicken production or raise prices further, which could disrupt the market for eggs, which is

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The Impact on Livestock and Cooking Oils

Maize's diversion for ethanol has also impacted the edible oil industry. The industry generates revenue not only from cooking oil but also from oilmeal, the by-product leftover after oil extraction. Oilmeal, primarily used as feed for cattle, poultry, and fish, has traditionally been sourced from oilseeds like soybean, mustard, and cottonseed. However, as maize ethanol production increases, the by-product from this process—Distiller's Dried Grains with Solubles (DDGS)—has grown, offering an alternative to traditional oilmeals.

DDGS, which contains protein and oil, is now being used in cattle feed at prices much lower than those of soybean meal. This has caused the price of soybean meal to fall, which has led to a drop in the price of soybeans themselves. Consequently, oilseed processors have seen a decline in revenue, which in turn has pushed down the prices offered to soybean farmers. This drop in prices led to significant dissatisfaction among farmers, as soybean prices dipped below the Minimum Support Price (MSP), creating a political issue ahead of elections in Maharashtra, India's second-largest soybean-producing state.

To protect soybean farmers, the government raised import duties on cooking oils by 20%, which led to a 20-30% rise in cooking oil prices. This increase, along with higher vegetable prices, contributed to a spike in retail inflation, reaching a 14-month high of 6.21% in October, which further strained household budgets.

The Sugar Industry's Concerns

The sugar industry, which has long been a significant contributor to ethanol production, is also feeling the pressure from the growing maize ethanol sector. In the 2024-25 period, the sugar industry offered 970 crore litres of ethanol, but oil marketing companies only allocated 837 crore litres, leaving 79 crore litres unallocated. The Indian Sugar and Bio-energy Manufacturers' Association (ISMA) expressed concern that this under-allocation could lead to unused capacity, resulting in financial losses for the industry. Reduced ethanol demand from the sugar industry, combined with the halt in sugar exports, has also caused a decline in sugar prices, threatening the financial stability of sugar farmers.

Government Measures and Growing Imports

In response to the maize shortage, the Indian government has taken steps to mitigate the impact on feed industries and farmers. For instance, the government has facilitated maize imports from neighboring countries like Myanmar through agencies like NAFED. However, these measures have not fully alleviated the pressure. India, which was previously a net exporter of maize, has become a net importer, with maize exports dropping significantly while imports have risen.

Agricultural experts project that by 2024-25, India will need an additional 8 million tonnes of maize to meet both ethanol and food/feed demands. However, maize production is expected to increase by only 4 million tonnes, exacerbating the pressure on prices and potentially leading to further imports. As a result, sectors like poultry and starch production may experience higher prices, with a knock-on effect on food prices.

The Future of Maize in India

With the government's goal of increasing ethanol blending in petrol to 20% by 2025, the demand for maize is expected to keep growing. This shift could lead to a change in crop patterns, with more farmers likely to switch to maize cultivation, reducing the area available for other crops like soybean, tur, mung, and urad.

While maize farmers may benefit from higher prices, the growing demand for ethanol could create challenges for other sectors, particularly those reliant on maize for feed. The maize-for-ethanol shift represents a complicated trade-off between energy goals and agricultural stability, leaving policymakers to navigate a tricky path.

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Weakening Indian Rupee: A Blessing in Disguise

Balasubramaniam V

The Indian aquaculture sector faced many challenges in 2024. While the industry has gained better positioning in government policies, farmers are still grappling with uncertainty. Think Grain Think Feed connected with Balasubramaniam V, founder of Certitude Farms in Tamil Nadu and general secretary of the Prawn Farmers Federation of India, who brings over three decades of experience, to gather insights on the industry's review and market projections for 2025. Below are the excerpts:

What were the biggest challenges faced by the aquaculture industry in 2024?

The major issues faced by Indian shrimp farmers and, consequently, the entire sector in 2024 include:

Productivity issues related to inconsistencies in seed performance due to inadequate broodstock genetics, which fail to cope with field ecology inundated with both known and unknown pathogens. As a result, the success rate of farming operations is steadily declining. This, combined with the continual increase in input costs and a decline in the efficiency of inputs, has driven the cost of production to levels that are almost equal to, or at times beyond, the selling price of the produce, thereby eroding profit margins for farming operations.

The continuing oversupply of shrimp in the global market, particularly from

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Ecuador—where production is rising due to pathogen-tolerant seeds—has compounded the issue. On the other hand, the largest importers of Indian shrimp, the USA and China, have reduced consumption due to inflation-related challenges. Oversupply and shrinking markets have put enormous pressure on export prices, completely eroding profits for both farmers and exporters. The only saving grace in these very difficult times is the weakening Indian rupee, which offers some respite.

Seed-producing hatchery operations have also been constrained by reduced demand from farmers and an oversupply of seeds, which repeatedly fail at the field level.

How has the regulatory landscape for the aquaculture industry evolved in recent years?

The regulatory landscape in the Indian aquaculture sector has always been reactive rather than proactive. Stakeholders constantly have to push authorities to modify the regulatory framework to suit the sector's current realities and needs.

That said, in recent times, the regulatory framework has addressed some long-pending issues, including modifications and new guidelines for operating hatcheries, nurseries, high-density farming in controlled environments, and farm registrations. We are also seeing higher engagement with stakeholders.

Yet, a lot remains to be done. For example, we have been pushing for policy and financial support for the domestication and development of pathogen-tolerant and genetically improved broodstock for our native species. The Indian shrimp sector is entirely dependent on an exotic species, the broodstock (parent animals) of which are 100% imported. It is high time the government supported a public-private collaborative project to focus on developing our own broodstock to safeguard our future. However, the government expects the private sector to take up this nationally critical, long-gestation project on its own.

Another issue that requires strong support from the government is the availability of institutional finance for shrimp farming operations. Currently, most financing is done by private sector players at high costs to small farmers. A concerted and sustained push by the government to make institutional financing available to small and marginal farmers would significantly impact their financial viability.

What impact did global supply chain disruptions have on the shrimp industry in 2024, and how did it affect operations?

Global supply chain disruptions were primarily caused by constraints in shipping routes, which led to higher shipping and insurance costs. These increased expenses resulted in lower prices for farmers, delayed shipments to markets, and subsequently, delayed payments for exporters. Overall, the disruptions had a significant negative impact on the shrimp industry, particularly on primary producers, by further weakening the prices for their produce.

Enterocytozoon hepatopenaei (EHP) has significantly impacted the shrimp industry. What is

your perspective on this issue?

EHP, combined with white fecal disease, has severely impacted the Indian shrimp farming sector. This disease, which is not native to India, was introduced through imported broodstock and further spread to farms through seeds, becoming deeply embedded in the farming environment. It has become a significant challenge, particularly in coastal regions, where production has drastically declined. Eradicating or preventing the disease seems nearly impossible for farmers.

The only viable solution is to provide farmers with highly resilient, pathogen-tolerant seeds. Currently, only one or two companies supply broodstock that is tolerant to white fecal disease, but more such support is needed to overcome these challenges. Many other Asian countries are facing similar issues.

Though the shrimp industry is facing many challenges, feed players are either diversifying or new players are entering the market. How do you see the role of such developments, and what variations in feed prices have you observed over the past year?

Feed costs account for nearly 60% of overall shrimp production costs, and feed production is controlled by a few large players, many of whom are also exporters. These players maintain profitable margins, regardless of the challenges faced by primary producers. For example, feed imported from Vietnam, even with ocean freight and import duties, is still cheaper than domestically produced feed.

This profitability has attracted more players into the feed sector. Before 2023, exporters reinvested their profits into expanding processing facilities and setting up feed manufacturing units. India produces about 1.5 million metric tons of feed annually, yet this economy of scale has not resulted in lower costs for farmers.

Large farmers who purchase over 1,000 tonnes of feed can buy directly from manufacturers at prices roughly 20% lower than what smaller farmers pay through dealers. This disparity severely impacts small and marginal farmers. To address this, the finance ministry has been urged to allow feed imports from Vietnam to offer farmers globally competitive prices and quality. In the 2024 budget, the import duty was reduced from 15% to 5%, and farmers are now pushing for it to be reduced to 0%.

Ultimately, while more players enter the market, there is no significant benefit for farmers in terms of higher efficiency or lower pricing.

Consolidation is occurring across various segments. In a previous interview, you mentioned that farms like yours are merging with larger operations. How do you envision future in the industry?

Yes, consolidation is occurring in certain parts of Andhra Pradesh. Many farmers, with decades of experience in the sector, are weary from recurring losses. As a result, younger professionals are leasing these farms and consolidating them into larger entities, which benefits both parties.

The key factor driving consolidation in the inland areas of Andhra Pradesh is the relatively lower impact of diseases in these regions. These areas benefit from abundant natural resources and the isolation of farms, which reduces the risk of disease spread compared to

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the densely clustered operations in the coastal regions. Clustered operations, on the other hand, are typically hotbeds for diseases, as they spread more easily from farm to farm.

Consolidated operations can achieve economies of scale, secure cheaper inputs, and operate more efficiently. However, diseases continue to challenge consolidation efforts. Smaller farms sometimes have better biosecurity practices and are easier to manage. While some consolidation is taking place, the Indian farming sector remains highly fragmented, and it is unlikely that small and medium-sized players will be completely displaced.

What advice would you give to small farmers to help them mitigate risks and thrive in the current environment?

Thriving in the current environment is extremely challenging due to recurring diseases and persistently low prices. Farmers must focus on improving biosecurity, returning to basics, properly preparing ponds, and prioritizing high-quality seeds based on past experiences and advice from neighbors. Maintaining low stocking densities and carefully monitoring farm conditions are also essential.

While oversupply and low demand persist, small farmers have the advantage of lower operational costs compared to larger operators. By ensuring successful crops through better management practices, small farmers can survive these tough times and be well-positioned to benefit when the market eventually rebounds.

What are your projections for the aquaculture industry in 2025, and what challenges do you foresee?

The year 2025 is likely to be as challenging as 2024, if not worse. Demand from key markets like the USA and China remains weak, and there are no major advancements expected in broodstock genetics or seed performance.

To navigate another difficult year, the industry must hope for reduced production in India and Ecuador, along with a recovery in demand from consuming markets. Preparing for a tough 2025 is essential, with the hope that conditions will improve in the latter half of the year.

Although farm gate prices have remained low, retail prices have not decreased in line with the lower cost of production. In fact, retail prices have risen, keeping pace with inflation in Western markets. This is another reason why consumption is not increasing. Retailers are benefiting from the current oversupply situation. How long farmers can endure these low prices will determine the market's trajectory in 2025.

2025 EDITORIAL CALENDER

JANUARY Industry Review	FEBRUARY Startups in Feed	MARCH Antimicrobial Resistance (AMR)	MAY Feed Economics
JUNE Sustainability	JULY Gut Health	AUGUST Innovations in Nutrition & Technology	SEPTEMBER Productivity Enhancement
NOVEMBER Natural Feed Additives	DECEMBER Feed Survey		

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Agricultural Security – High on the Agenda for China

Image Source: Richard Aguilar, YouTube

Chinese agricultural scientists are intensifying efforts to breed high-quality soybean varieties after identifying several high-oil and high-yield varieties of the crop. This is part of a broader push in breeding technology aimed at ensuring food security.

Nearly 10,000 soybean resources were collected during China's largest-ever agricultural germplasm census, which involved 1.5 million grassroots workers and covered "every corner of the nation," the Ministry of Agriculture said on Tuesday.

Completed earlier this year after three years of comprehensive work, the census catalogued China's agricultural germplasm resources, including crop varieties, livestock, and aquaculture species. This initiative is in line with Beijing's high priority on agricultural security amid supply chain uncertainties and climate challenges.

The census collected over 63,000 germplasm samples for grain crops, with soybeans emerging as a key focus due to China's status as the crop's country of origin. However, enormous demand from the world's biggest food consumer has driven China to import most of the crop, which is used for food, cooking oil, and animal feed, over the past few decades.

The survey, the third of its kind conducted in China since 1949, "has laid a robust resource foundation for ensuring national food security," said Liu Xu, an academic with the Chinese Academy of Engineering, which led the project.

China, with a population of 1.4 billion, launched a national campaign in 2021 to clean up its seed market, which was once filled with pirated and counterfeit crop seeds. It also sought to boost independent research and development of new varieties after President Xi Jinping called for the "revitalization of the seed industry."

Researchers are focused on developing superior varieties that are "usable, practical, and desirable." The three-year census facilitated innovation, according to the ministry.

From the resources collected, scientists have uncovered exceptional traits, such as high-oil, high-yield soybeans, drought-resistant corn suitable for mechanized harvesting, and short-growth-cycle oilseed rape.

Scientists have already initiated a germplasm improvement program, focusing first on corn due to its pressing demand in feed and biofuel production, Liu said. He added that innovation will extend to other critical crops, such as soybeans and rapeseed.

Soybean and corn breeding efforts are aligned with China's broader goals of improving agricultural self-reliance. Per-unit yields of both crops grown in China are roughly just 60% of those planted in the United States, according to figures frequently cited by agricultural officials.

After decades of public debate, the world's biggest buyer of these crops gave the green light last year to the large-scale commercial planting of genetically modified corn and soybeans as part of its strategy to bolster domestic production.

China has transformed from a net soybean exporter to a net soybean importer since it liberalized its soybean market in 1996. The US was previously the biggest source of soybean imports, but it has recently been replaced by Brazil as Beijing sought to diversify supplies.

In 2023, China's soybean imports totaled 99.41 million tonnes, with 70.4% coming from Brazil and 24.3% from the US, according to China's General Administration of Customs.

Source: My News

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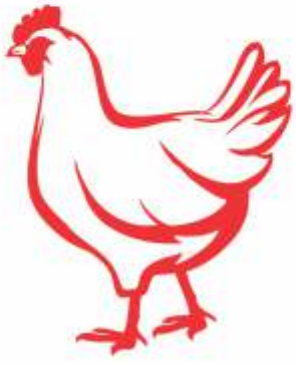

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