

# dairy dimension

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SCIENCE + TECHNOLOGY

## Solving India's Fodder Crisis

AI-Powered Path to Livestock Nutrition

## India's Milk Price Surge

Signals from the Summer of 2025

**Ragavan Venkatesan**

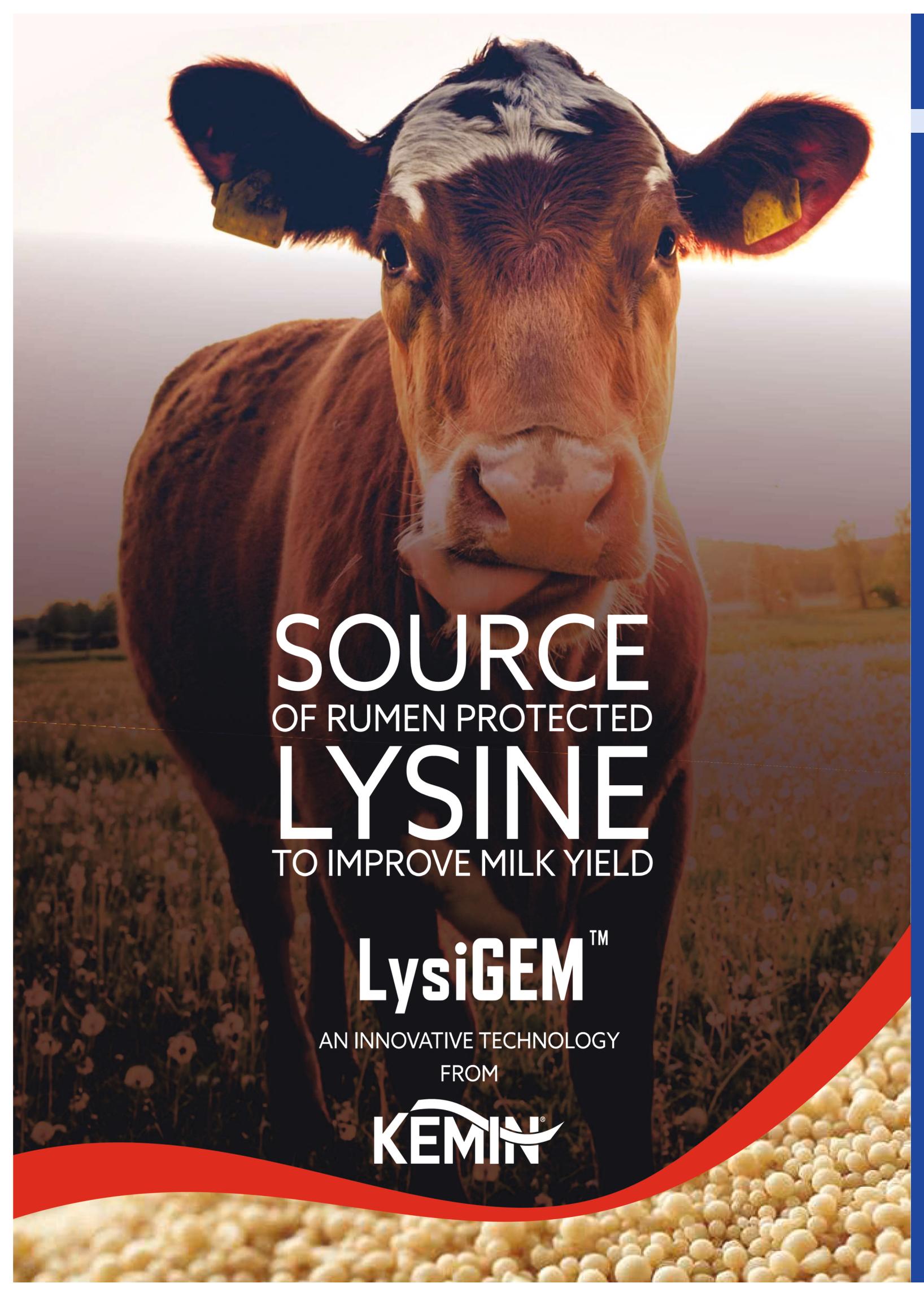
*Revolutionising Indian Dairy Fintech*



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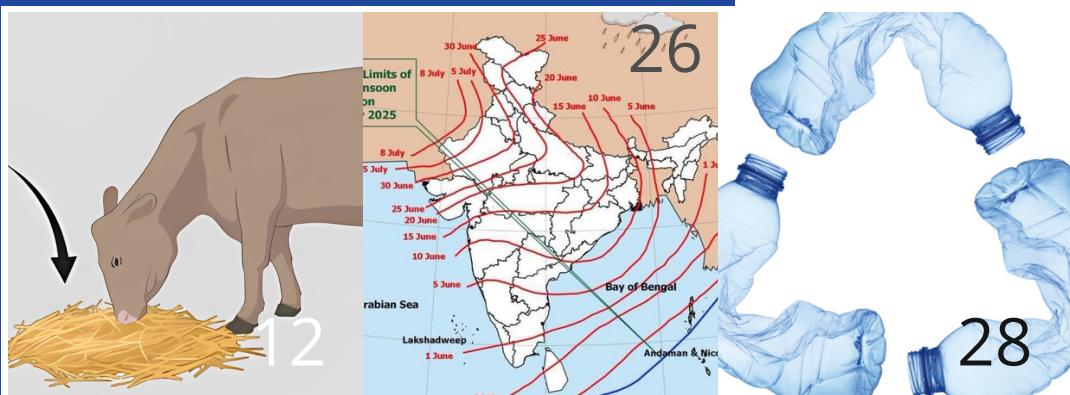
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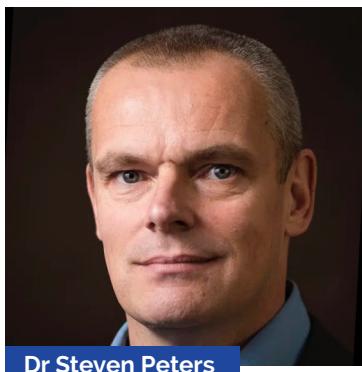
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# Lactose Malabsorption and Lactose Intolerance: Two Different Issues

By **Dairy Dimension Editorial Team**, with insights from **Dr. Stephan Peters**, Manager, Dairy, Nutrition, Health and Sustainability, Dutch Dairy Association, and Chief Editor, Voeding Magazine.



Dr Steven Peters

## Executive Summary

In India, a country where milk is more than just a beverage—it's a symbol of nourishment, culture, and economy—the debate around lactose intolerance has taken on outsized proportions. Recent

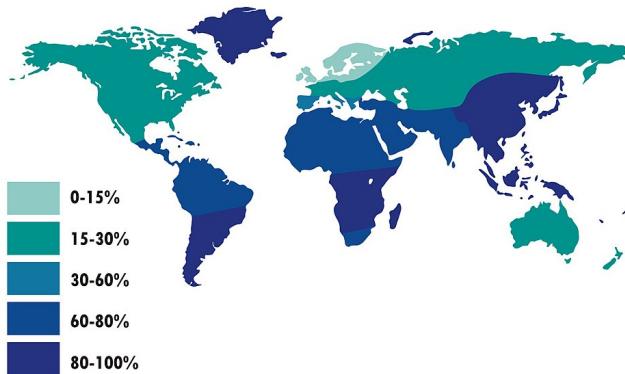
narratives, often amplified by the plant-based movement, suggest that a majority of Indians are lactose intolerant. But how accurate is this claim?

In an in-depth conversation with Dr. Stephan Peters of the Dutch Dairy Association, combined with recent scientific findings, Dairy Dimension examines the critical difference between lactose malabsorption and lactose intolerance, debunks common myths, and offers a science-backed perspective on dairy's role in Indian nutrition.

## Understanding the Basics: Malabsorption vs. Intolerance

Lactose malabsorption refers to a reduced ability to digest lactose due to diminished lactase enzyme activity. Lactose intolerance, on the other hand, occurs when this enzymatic deficiency results in noticeable

## Worldwide prevalence of lactose intolerance in recent populations (schematic)



gastrointestinal symptoms, such as bloating, gas, or diarrhoea.

Dr. Peters explains: "Most people with lactose malabsorption don't experience symptoms. True lactose intolerance, with clinical symptoms, is far less common."

The global conversation often conflates these two conditions, leading to exaggerated estimates and unnecessary dairy avoidance.

## Are 70% of Indians Lactose Intolerant? Unpacking the Misleading Maps

Many global maps categorise India as having a 60–80% prevalence of lactose intolerance. However, these figures are often based on genetic predisposition (lactase non-persistence), rather than actual symptom-based diagnosis.

"These maps reflect potential malabsorption, not intolerance. They're based more on race than real clinical data," Dr. Peters cautions.

In India, most people regularly consume fermented dairy products (such as curd, buttermilk, and paneer) without issue. Anecdotal and field evidence suggest the true prevalence of intolerance is much lower than often claimed.

## The Dairy Matrix: Why Not All Dairy Is Equal

Fermented dairy products like curd, yoghurt, and cheese are naturally low in lactose due to the action of lactic acid bacteria. These products often:

- Contain beneficial probiotics
- Are easier to digest
- Deliver key nutrients like calcium, vitamin B12, and high-quality protein

Dr. Peters notes, "If you're worried about symptoms, try fermented dairy first. It's nutritious and usually very well tolerated."

## Self-Diagnosis: A Bigger Problem Than Lactose

Many people today self-diagnose lactose intolerance based on general symptoms such as bloating or gas, which could stem from stress, poor diet, or irritable bowel syndrome.

"Doctors often tell patients to just avoid milk if they complain, without proper testing. This creates a false

Product	Avg Lactose (per serving)	Tolerance Profile
Cow's Milk (200 ml)	9-9.8 g	Moderate to Low
Yoghurt (150 ml)	5.5 g	High
Gouda Cheese (30 g)	<0.1 g	Very High
Lactose-Free Milk	0.3 g	Very High

confirmation loop," says Dr. Peters.

He emphasises the need for scientific diagnosis via tests like the hydrogen breath test or elimination diets to confirm true intolerance.

### Can You Train Your Gut to Digest Lactose?

Yes. Recent studies have shown that gradually increasing lactose intake can help some lactose-intolerant individuals tolerate dairy products better over time. This is due to changes in gut microbiota, particularly the increase of beneficial bifidobacteria.

"Lactose tolerance is dose-dependent. Even lactose-intolerant people can often tolerate 12g per meal, equivalent to a glass of milk," he adds.

### In India: Dairy Is Not Optional

India is already a protein-deficient country, and dairy is a crucial source of affordable, high-quality nutrition, especially for vegetarians. Removing dairy from diets without cause may worsen malnutrition and child stunting.

"In countries like India or South Africa, dairy can prevent stunting. Removing it due to a misunderstood intolerance is nutritional malpractice," warns Dr. Peters.

### Industry and Policy Takeaways

#### For Policymakers:

- Clarify public communication on maldigestion vs. intolerance
- Promote dairy in public nutrition programs to combat stunting

#### For Industry:

- Reduce added sugars in dairy products to preserve health claims
- Improve lactose-related labelling transparency
- Highlight low-lactose options like curd, cheese, and yoghurt

#### For Consumers:

- Don't self-diagnose
- Experiment with different dairy types
- Consult a dietitian for personalised guidance

### Conclusion: Dairy as a Driver of Nutrition Equity

As Dr. Peters reminds us, "Plant-based doesn't mean plant-only. And sustainable diets must also be nutritionally sufficient." In a country where milk is both livelihood and lifeline, India must reject the simplistic

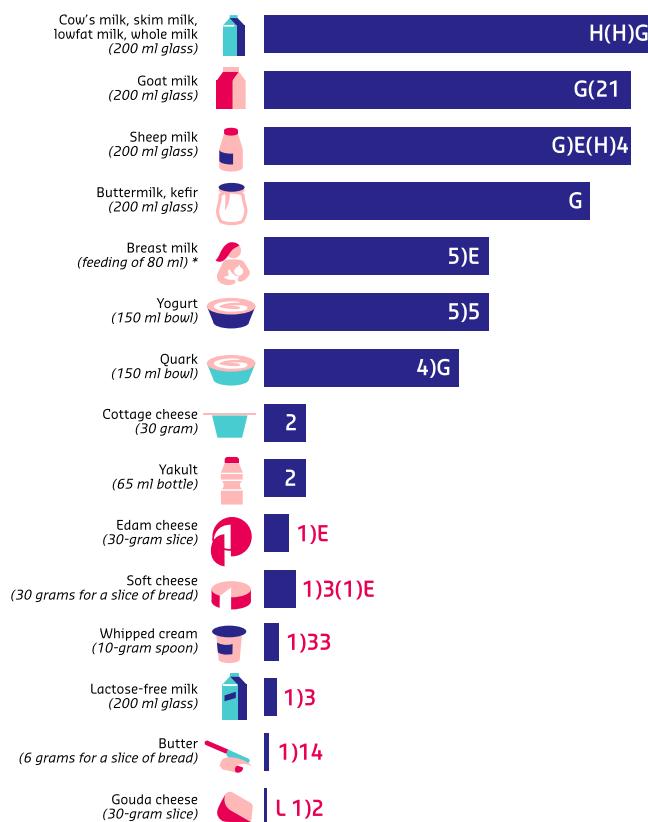
narratives of Western dietary trends. With scientific

### Myths Debunked

Myth	Truth
Indians are largely lactose intolerant	No clinical evidence supports this claim
Dairy always causes bloating	Fermented dairy is usually well-tolerated
Plant-based milk is a perfect substitute	Most lack essential nutrients unless fortified
A2 milk solves lactose issues	A1/A2 refers to protein, not lactose content
Milk allergy = lactose intolerance	They are biologically distinct condition

understanding, proper labelling, and improved public awareness, dairy can continue to nourish generations without unnecessary fear.

### Lactose per serving of dairy product



Lactose content (grams) per serving size (ml or grams) based on "Portie-online" (RIVM).

\*Average feeding in a 3.5 month and 6.5 kg baby receiving 10 feeding daily.  
(Borstvoeding.nl)

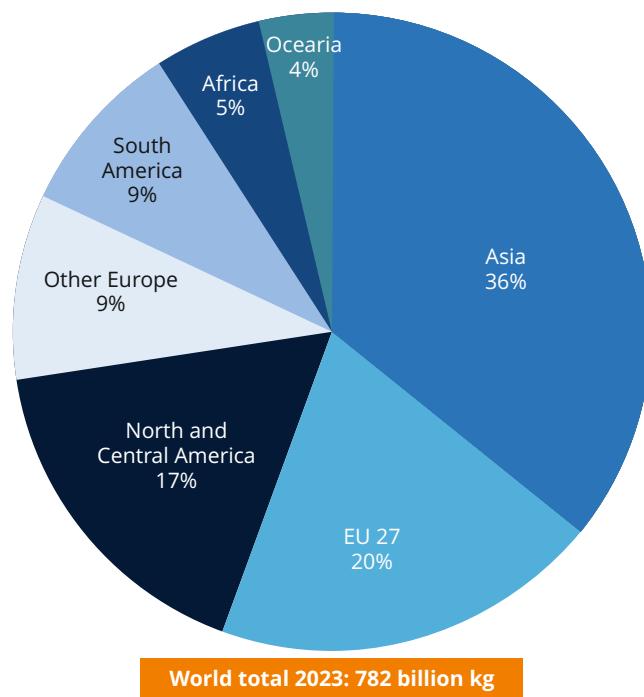
# FAO: Global Milk Production to Reach 992.7 Million Tonnes in 2025, Asia Leading Growth

The United Nations Food and Agriculture Organization (FAO) projects global milk production to hit 992.7 million tonnes in 2025, marking a modest 1% year-on-year growth. This represents the second consecutive year of slight expansion in the global dairy sector.

Asia is set to be the primary driver of this growth, with significant contributions from India, Bangladesh, and Pakistan. These nations are expected to see strong gains due to continued herd expansion and gradual improvements in productivity. This surge in Asian output is anticipated to more than offset a projected decline in China, where persistent cost pressures and falling farmgate prices are impeding growth.

India reinforces its position as the world's largest milk producer, contributing approximately 23% of the total global output. Its robust domestic demand, supported by government-backed cooperative networks and widespread rural participation, solidifies India's pivotal role in national and global food security. The country's focus on smallholder-driven production, coupled with an increasing shift towards value-added products and enhanced cold-chain infrastructure, continues to ensure steady year-on-year growth. The International Dairy Federation (IDF) further highlights India's importance, noting that along with China, it accounts for half of global milk consumption. Milk serves as a crucial source of income and nutrition across India's rural economies, particularly through cow and buffalo milk production. In the Americas, Brazil and Mexico are forecast to experience significant growth, alongside a recovery in Argentina and the United States. Europe and Oceania are predicted to maintain stable or marginally positive growth. Conversely, Africa may see a slight contraction due to escalating input costs and conflict-related disruptions.

Global dairy trade, measured in milk equivalents, is forecast to contract by 0.8% in 2025. While a rebound in Chinese imports, driven by increasing food industry demand and declining domestic output, is expected, it will likely not offset anticipated import declines in Africa,



Latin America, and the Near East. Export shifts are also on the horizon, with decreased shipments from the European Union, Saudi Arabia, and the United States potentially balanced by increased exports from New Zealand and Uruguay.

The FAO Dairy Price Index averaged 153.5 points in May 2025, up 21.5% year-on-year. Prices for butter and cheese reached record highs due to tight global supplies and strong demand, especially in Oceania and the EU. Whole milk powder prices also surged, while skim milk powder prices dipped due to oversupply in Europe and tepid demand in Asia.

In conclusion, with Asia consistently driving both demand and production, the global dairy sector is undergoing a significant regional realignment. Rising prices, shifting trade patterns, and cost-sensitive production dynamics will be key factors shaping the industry's evolution in 2025 and beyond.

# BRIDGING INDIAN DAIRY WITH THE WORLD

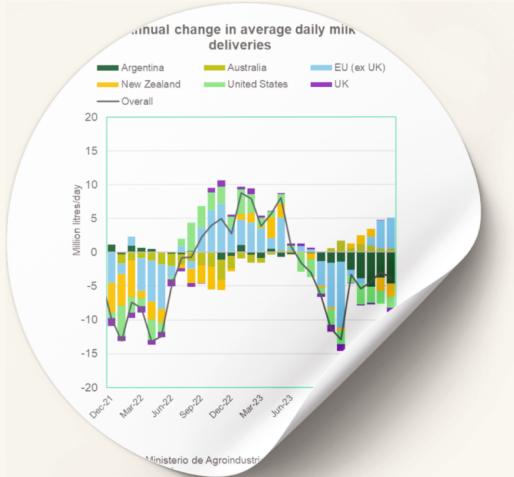


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# Solving India's Fodder Crisis: The AI-Powered Path to Sustainable Livestock Nutrition

By Dr. Simranjeet Kaur<sup>1</sup>, Dr. Harsimran Kaur<sup>1</sup>, Dr. Harinder Singh<sup>2</sup> and Dr. Ramandeep Singh<sup>1</sup>

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Dairy farming is a vital pillar of India's agricultural economy, contributing a significant 4.5% to the national GDP and sustaining over 80 million rural households, predominantly small and marginal farmers. Despite India's standing as the world's largest milk producer, the sector grapples with persistent challenges: low milk yield, escalating feed costs, and severe fodder shortages, particularly during the harsh summer and post-monsoon periods. Data from NDDB (2022) reveals a staggering 63% deficit in green fodder and a 24% deficit in dry fodder, with only a meager 4% of cultivable land dedicated to fodder production. Climate change further exacerbates this precarious situation, diminishing fodder crop yields and nutritional quality due to erratic weather patterns and rising temperatures.

In this challenging landscape, Artificial Intelligence (AI) is rapidly emerging as a game-changer. Technologies like machine learning, remote sensing, and geospatial

analytics are proving invaluable in addressing real-time issues in fodder cultivation, from precise disease detection and nutrient management to accurate yield forecasting.

One pivotal innovation is AI-powered nutritional audits. These systems utilize sensors and advanced imaging to assess fodder quality—measuring crucial parameters like protein and fiber content—directly on the farm. This capability enables farmers to formulate better feed and optimize harvest timings. Beyond quality assessment, AI-driven platforms offer precision guidance for sowing, irrigation, pest control, and harvesting, drawing on real-time data from satellites and in-field sensors. By enhancing fodder quality and availability, AI promises to significantly boost milk yield, improve animal health, increase farmer income, and bolster national food security. Recognizing this immense potential, both the government and leading agritech firms are actively

investing in AI-based fodder solutions, aiming to build a climate-resilient and highly productive dairy sector.

### Climate Change's Impact on Fodder Cultivation: A Growing Crisis

Fodder cultivation in India, largely dependent on rainfall, is acutely vulnerable to climate variability. Extreme weather events are demonstrably reducing both the quantity and nutritional quality of fodder.

- **Yield Decline:** Heatwaves, droughts, floods, and unpredictable rainfall patterns delay sowing, reduce overall biomass, and lower the nutritional value of critical fodder crops such as sorghum, maize, napier, and berseem (Sharma et al., 2021).
- **Temperature Rise Effects:** A mere 1°C rise in average temperature can slash fodder yields by 6–10%, with particularly severe impacts in dry regions such as Rajasthan and Bundelkhand (Kumar et al., 2021).
- **CO Impact:** Elevated atmospheric CO levels can subtly alter forage quality, leading to reduced crude protein content and digestibility, which directly impacts animal health and milk production (Rani et al., 2020).
- **Shrinking Pastures:** Land degradation, unchecked urban expansion, and shifting rainfall patterns are continuously diminishing natural pasture availability, intensifying the existing fodder shortages (Reddy et al., 2022).

These combined factors underscore that climate change poses a serious threat to fodder security, particularly for India's numerous smallholder dairy farmers.

### Digital Technologies and AI: The Solution Pathway

To effectively counter these challenges, digital technologies, with Artificial Intelligence at the forefront, are being vigorously explored to develop climate-smart fodder strategies. AI algorithms can analyze vast datasets of real-time weather data, satellite imagery, and granular soil data to deliver hyper-localized advisories for optimal sowing, precise irrigation, effective pest control, and timely harvesting (Banu and Ramesh, 2022).

For instance:

- **Machine learning models** can predict drought-prone periods, enabling farmers to select and cultivate alternative forage crops better suited to arid conditions.
- **AI-powered crop simulation tools** can accurately estimate fodder biomass production under various climatic scenarios, empowering farmers with data-driven insights for informed planting decisions.
- **Remote sensing tools** can swiftly identify areas

experiencing soil moisture stress or developing pest hotspots, facilitating timely interventions (Kumar et al., 2023).

These innovative tools not only help mitigate climate-related risks but are also instrumental in ensuring sustainable fodder cultivation, thereby enhancing the resilience of the entire dairy sector.

### AI for Climate-Resilient Fodder Cultivation

AI offers intelligent, data-driven solutions that significantly boost productivity and resilience in fodder cultivation while reducing costs.

- **Smart Sowing & Irrigation:** AI models integrate weather, soil, and satellite data to recommend sowing times, irrigation schedules, and harvest periods. In Maharashtra, an AI model applied to fodder sorghum has already demonstrated a 20% increase in yields (Singh et al., 2023). Similarly, AI-based irrigation systems in Rajasthan and Gujarat have achieved remarkable 30% water savings without compromising yield (Sharma et al., 2021; Rao et al., 2022).
- **Resilient Variety Selection:** Machine learning is proving invaluable in identifying climate-resilient crop hybrids. For example, AI pinpointed drought-tolerant bajra-napier hybrids specifically suited for the climatic conditions of southern India (Bisht et al., 2022).
- **Crop & Pest Management:** AI-powered applications such as Plantix and Krishi AI enable farmers to use smartphone images to detect early signs of diseases, pests, and nutrient deficiencies in crops like maize or cowpea, providing immediate, actionable advice (Chandel et al., 2023).

By providing precision tools and data-driven insights, AI empowers farmers to effectively adapt to climate variability and sustainably enhance fodder productivity.

### Tangible Farmer Benefits and Productivity Gains

AI interventions have already demonstrated significant benefits in terms of productivity and resilience on the ground:

- A pilot project in Karnataka, utilizing AI-guided fodder planning, reported an impressive 18–25% increase in green fodder yield per acre, coupled with reduced irrigation frequency (Banu and Ramesh, 2022).
- In Telangana, the deployment of computer vision tools for early detection of *Helicoverpa armigera* in fodder legumes led to a substantial 30% reduction in pesticide usage, directly improving fodder quality (Gowda et al., 2023).
- Farmers in Haryana and Punjab who adopted AI-

based weather and input prediction systems saw a remarkable over 40% reduction in fodder crop failure during erratic monsoon seasons, by optimizing their sowing cycles (Kaur and Singh, 2021).

### Weather Forecasting and Precision Crop Planning

Unpredictable weather events—ranging from erratic rainfall and intense heatwaves to severe storms—pose a constant threat to fodder productivity and quality. AI-driven weather forecasting is transforming how farmers adapt through smarter, more responsive planning.

- **Hyper-Local Forecasting:** AI leverages vast datasets from agencies like IMD, ISRO, NASA, and AWS to deliver highly accurate, village-level forecasts. Machine learning models continuously track real-time variations in rainfall, humidity, and temperature.
- **Decision Support via Apps:** Agri-apps powered by AI provide farmers with timely alerts and actionable crop advisories. This empowers them to adjust sowing, irrigation, and harvesting schedules proactively, thereby minimizing losses (Ravikumar et al., 2021).

AI-powered weather intelligence is fundamentally reshaping climate adaptation strategies in fodder farming, moving from reactive responses to proactive management.

### Real-World Case Studies: Tamil Nadu and Haryana

Practical applications of AI are already demonstrating measurable success. Banu and Ramesh (2022) documented a pilot project in Tiruchirappalli, Tamil Nadu, where an AI-integrated mobile advisory app successfully alerted smallholder dairy farmers to impending dry spells. Acting on this advisory, farmers adjusted their fodder sorghum and hybrid napier harvest timings, resulting in a 28% reduction in green fodder spoilage due to moisture stress.

Similarly, in Haryana, fodder producers utilized AI-driven wind forecasting tools to identify optimal harvesting windows for crops like sorghum and maize intended for silage. By harvesting before predicted storm events, they significantly minimized nutritional losses and microbial spoilage—common issues when ensiling is delayed or exposed to excess moisture (Kaur and Singh, 2021).

### AI Applications in Precision Fodder Cultivation

AI-driven technologies, including drones, IoT sensors, and satellite imagery, are revolutionizing fodder farming through precision agriculture.

- **NDVI Crop Monitoring:** AI-generated Normalized Difference Vegetation Index (NDVI) maps are crucial for assessing plant health, detecting nutrient deficiencies, and identifying drought stress. This

allows for targeted interventions that lead to higher yields (Kumari & Patel, 2022).

- **Pest & Disease Detection:** Machine learning apps, often accessible via smartphones, can identify early signs of diseases like leaf blight or smut using captured images, providing instant treatment advice (Jha et al., 2023).
- **Yield Prediction & Planning:** AI accurately estimates fodder yield and dry matter content, enabling optimized silage preparation, feed planning, and logistics. Platforms such as e-SAP and FASAL are already offering these services across multiple Indian states (Sharma et al., 2021).

### IoT and AI Integration in Irrigation Management

The increasing deployment of IoT devices—including soil moisture probes, weather stations, and canopy temperature sensors—in fodder plots allows for continuous data collection. AI algorithms then process this data to optimize irrigation schedules, a critical feature in water-scarce states like Rajasthan and Tamil Nadu. A study by Rao et al. (2022) revealed that integrating IoT-based moisture sensing with AI irrigation models led to a remarkable reduction in water usage by up to 30% without compromising biomass output. These technologies are indispensable for ensuring the long-term sustainability of fodder cultivation, especially under increasingly unpredictable climatic regimes.

### AI in Seed Selection and Breeding for Fodder Crops

AI is accelerating the development of high-yielding, nutrient-rich, and climate-resilient fodder varieties. Institutions like ICAR and various agritech start-ups are now leveraging AI-powered genomic tools for faster, more data-driven seed selection processes.

### Digital Advisory Platforms:

- **DeHaat:** Offers AI-based crop advisory and input delivery services specifically for fodder crops.
- **BharatAgri:** Provides personalized calendars for sowing, irrigation, and disease alerts.
- **MooFarm:** Integrates AI to suggest optimal fodder plans based on specific animal lactation cycles and availability.
- **NDB INAPH:** Utilizes AI for ration balancing and comprehensive fodder planning, drawing on extensive animal nutrition data (NDB, 2023).

These platforms empower small dairy farmers with real-time, scientifically-backed decisions, while simultaneously linking them to vital resources like finance, insurance, and broader markets (Rao et al., 2022).

## Policy Recommendations and Imperatives

To fully unlock AI's transformative potential in fodder production and breeding, a multifaceted policy strategy is imperative:

- **Strengthen Rural Digital Infrastructure:** Robust investments in broadband and mobile network expansion are fundamental to ensuring last-mile connectivity for farmers in remote areas.
- **Foster Public-Private Partnerships (PPPs):** Encourage active collaborations between research institutions, innovative tech start-ups, and Farmer Producer Organizations (FPOs) to co-develop affordable and user-friendly AI solutions tailored to local needs (NABARD, 2022).
- **Provide Subsidies and Credit Access:** Implement financial incentives for farmers to adopt AI-powered input systems and precision farming tools.
- **Capacity Building through KVks and FPOs:** Develop comprehensive training programs to equip farmers with the necessary digital literacy and skills to effectively use AI-enabled advisory apps and sensor-based monitoring tools.
- **Promote Open-Data Ecosystems:** Facilitate open access to critical genomic, climatic, and agronomic datasets for researchers and developers. This will enable the creation of more accurate, robust, and localized AI models.

## Conclusion

Artificial Intelligence (AI) holds immense potential to significantly reduce India's persistent fodder deficit, substantially improve feed quality, and drive sustainable

dairy farming practices. As the sector navigates the dual pressures of climate change and surging demand for animal products, AI stands as a crucial tool for enhancing resilience and securing the livelihoods of millions in rural areas. With over 70% of rural households relying on livestock for income and nutrition, AI-powered solutions can deliver a profound and meaningful impact. However, to scale these innovations effectively and equitably, India must prioritize strengthening its rural digital infrastructure, ensuring widespread access to affordable smart technologies, boosting digital literacy among farmers, and fostering collaborative public-private partnerships. The future of Indian dairy, and indeed rural prosperity, is increasingly intertwined with the intelligent adoption of AI.

## EDITORIAL FOCUS

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### Next-Gen Milk Processing & Value-Added Innovation

- Exploring advanced processing technologies and product innovations—from UHT and fermentation-based systems to high-protein and functional dairy products—that are redefining quality, shelf-life, and profitability for Indian and global dairy processors.

### Strengthening Farm-to-Factory Integration

- Deep dives into best practices and models that enhance traceability, milk quality, and procurement efficiency—covering farmer digitisation, BMC (bulk milk cooler) adoption, chilling infrastructure, and cooperative/private sourcing models.

### Sustainable Inputs & Resilient Dairy Farming

- A close look at emerging upstream trends like climate-smart fodder systems, sexed semen, precision breeding, and animal nutrition, which contribute to productivity, farmer livelihoods, and long-term sectoral resilience.

## dairy dimension

To contribute write us at [discover@dairydimension.com](mailto:discover@dairydimension.com)



## Cooling the Crisis: Nutritional Strategies for Heat-Stressed Dairy Cows in India

India's dairy cows endure some of the harshest summer conditions among major milk-producing nations. Heat stress begins at a Temperature-Humidity Index (THI) above 72, and for large parts of India, this threshold is crossed for over 100 days a year. During this time, cows eat less, produce less, and become more vulnerable to disease.

Unlike Europe or North America, where mechanised cooling is widespread, many Indian farmers lack access to misting fans or ventilated housing. Hence, nutritional strategies become a frontline defence.

### Energy-Dense Diets with Lower Heat Load

#### 1. Add Bypass Fats (Protected Fats)

- Fat generates less internal heat during digestion than carbohydrates and proteins. Use rumen-protected fats, such as prilled palm oil or cottonseed-based fats.
- Maintain total fat levels within 5-7% of dry matter (DM) to prevent rumen dysfunction.

#### Balance Protein Types

- Emphasise rumen-undegradable protein (RUP) sources, such as bypass soybean meal or cottonseed cake.

- Reduce rumen degradable protein (RDP) to prevent ammonia accumulation and internal heat load.

#### Maintain Electrolyte and Mineral Balance

Cows lose electrolytes through increased salivation and sweating in extreme heat. Supplementing the diet with electrolytes improves thermoregulation and hydration:

- Use sodium bicarbonate ( $\text{NaHCO}_3$ ) and potassium bicarbonate ( $\text{KHCO}_3$ ) to buffer rumen pH and maintain intake
- Add magnesium, chromium, and niacin to help cows cope with stress and maintain glucose metabolism
- Betaine (from sugar beet) helps cells retain water, especially useful in arid zones like Rajasthan or Telangana

#### Improve Water Availability & Cooling

- Provide clean, cool water 24x7. Even a drop in water temperature from 30°C to 20°C can reduce respiratory rate and increase milk yield.
- Ensure one water trough per 15 cows, with good shade and water pressure
- Avoid feeding during peak heat; cows should rest and ruminate during the hottest hours

### Adjust Feeding Schedules and Ration Design

- Feed during cooler parts of the day—early morning (4–6 AM) and late evening (8–10 PM)
- Split the total daily ration into multiple small meals to maintain dry matter intake (DMI)
- Use high-digestibility forages and less lignified roughage (e.g., early-cut sorghum or maize silage instead of mature crop residues)

### Support with Functional Additives

- Include rumen-protected amino acids (methionine and lysine) to support milk protein synthesis
- Plant-based bioactives like garlic oil, mint, or cinnamon can reduce inflammation and promote gut comfort
- Probiotics and live yeast help stabilise rumen microbes during feed and heat stress

In essence, heat stress is both a climate and economic issue. For millions of Indian dairy farmers whose livelihoods depend on milk production, mitigating heat stress through strategic nutritional interventions is paramount. By reducing metabolic heat, supporting

hydration, and sustaining feed intake, these strategies protect not only the cows but also the very foundation of rural economies.

### India-Specific Considerations

Parameter	Recommended Strategy
Climate	Heat stress from March to July in most states
Housing	Shade + ventilation + feeding in cooler hours
Breed Susceptibility	HF-crosses suffer more than Gir, Sahiwal, or Tharparkar
Feed Base	Improve the digestibility of dry fodder, add fat supplements
Access to Additives	Focus on cost-effective, locally sourced options



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# Digital Revolution in Indian Dairy Finance

By: Prashant Tripathi, Dairy Dimension

From pioneering Aadhaar-enabled payments to redefining bovine insurance and rural credit, Ragavan Venkatesan's journey is anything but linear. As the Founder & CEO of DGV Group—India's first integrated Dairy Fintech, InsurTech, and Marketplace platform—he is building a digital dairy ecosystem from the ground up. In this exclusive conversation with Dairy Dimension, Ragavan traces his journey from Delhi's policy corridors to India's remotest milk sheds, sharing powerful insights on innovation, inclusion, and India's next rural revolution.

## Early Foundations and Public Innovation

### Where did you grow up, and what led you into the dairy sector?

I was born in Bangalore but raised in Delhi, where my father worked with the Planning Commission. He was among the first IIM Bangalore graduates to be inducted into government service. After graduating from Christ University in Bangalore and pursuing a postgraduate degree in foreign trade, I started my career in Hyderabad in the aerospace sector.

But my turning point came when I joined the Government of India's Common Service Centre (CSC) project. We were building India's first 100,000 ICT centres in rural areas. Working closely with senior bureaucrats and the RBI, I got involved in early digital finance initiatives—precursors to Aadhaar and DBT. This led me to NPCI, where I was part of the founding team that created Aadhaar-enabled Payment Systems, micro-ATM standards, and later helped banks adopt digital Know Your Customer (KYC) and Direct Benefit Transfer (DBT) infrastructure.

### How did the transition from digital finance to dairy happen?

After years of working with digital finance, I wanted to apply the India Stack to impact semi-urban and rural livelihoods. Dairy emerged as the most consistent and underserved sector. It contributes 25–30% of India's agri GDP and has steady, year-round cash flow—ideal for financial products. And yet, bankers were stuck on just cattle loans, without regard for breed value or production economics. That's where the idea for DGV was born.

### Building DGV: A Specialist Platform for Dairy

#### What is DGV, and how is it structured to address rural dairy challenges?

DGV is a full-stack platform designed exclusively for the dairy ecosystem. Think of it as a trilogy:

- DGV Connect: A marketplace for high-quality bovines from verified breeders.
- DGV Money: Financial products tailored to dairy—from new animal loans to dairy maintenance and equipment finance.
- DGV InsurTech: India's first digital cattle insurance platform, using biometric snout recognition and AI-based health grading.

This integration means a farmer can source, finance, insure, and monitor a bovine—all digitally and doorstep-enabled. We've created new asset classes, refined loan structures, and built partnerships with processors and banks to make the system efficient and transparent.

### Reforming Bovine Insurance with Deep Tech

#### Cattle insurance has historically been a failure. How are you changing that?

Traditional cattle insurance was plagued with fraud and inefficiency. Para-vets controlled both assessment and claim verification, creating a conflict of interest. Physical ear tags were easily tampered with.

We solved this issue by utilising biometric muzzle recognition and implementing real-time video SOPs. Our system captures 16 health parameters and analyses them algorithmically. This data is API-integrated with insurers, allowing unbiased, tech-driven underwriting. We also plan group policies for rejecting antibiotic-laced milk—a real problem today.

### Understanding Farmer Behaviour and Regional Realities

#### What have you learned about dairy farmers across India?

A few key learnings:

- Refinancing dominates: 80% of dairy loans are for existing animals masquerading as new purchases.
- Commercial concentration: 20% of farmers contribute 80% of the milk. These are the micro-enterprises we need to scale.
- Regional diversity: South India and Western UP are very different in risk behaviour and cattle preferences.
- By creating segmented loan products—new purchase, maintenance, and equipment—we're helping banks lend better and farmers grow sustainably.

### Matching Processor Needs with Farmer Incentives

#### How can processors benefit from DGV's model?

Milk pricing in India doesn't account for milk quality or breed economics. Processors need milk that fits their product goals—high-fat buffalo milk for ghee, or Gir cow milk for A2 milk products. We help processors understand their catchment's breed mix and create subsidy schemes to incentivise specific breeds. Farmers, in turn, get better prices and capital access.

### Mitigating Risk in a Volatile Market

#### How does DGV balance risk, especially with milk price volatility?

We analyse:

- Vintage of the farmer pouring data with processors
- Milk quality and consistency
- Repayment history across loans

Our AI-ML underwriting engine gets smarter with every loan. The organised sector gets priority. The end-use is tracked and verified digitally, de-risking both farmer and lender.

### Circular Dairy Economics and Long-Term Sustainability

#### You speak about circularity in dairy. Can you

**elaborate?**

Dairy should be at the centre of rural circular economies. Manure becomes organic fertiliser. Milk generates income. Feed and fodder can be grown on the farm. If we embed dairy into organic agriculture, we create resilient income systems. Our Micro Dairy Enterprise model encourages farmers to scale up to 15-35 animals, providing better feed, equipment, and animal care.

**Addressing Cooperative and Policy Ecosystems****How are you engaging with cooperatives and the government?**

Cooperatives are slower due to bureaucratic inertia, but we're engaging through NABARD and state governments. In Andhra Pradesh, we partnered with Amul, District Cooperative Central Banks (DCCBs), and the state cooperative bank. We've also been recognised by the Government of Maharashtra's agri-startup policy.

Private MPPs and federations like KMF and GCMMF are more agile, and we're already piloting digital finance with them.

**Reflections and Forward Paths**

**Two final questions. What would you tell a younger Ragavan? And what advice would you offer to the**

**dairy industry?**

- To my younger self: Don't jump into entrepreneurship straight out of college. Build experience, credibility, and social capital first.
- To the dairy sector: Embrace digitisation now. Don't assume your farmers will stay loyal forever. Offer them financial and insurance services. Make your catchment brighter, not just bigger.

**Conclusion**

Ragavan Venkatesan isn't just building a startup—he's reimagining the very fabric of India's dairy economy. As DGV matures into a full-spectrum ecosystem platform, its impact is poised to extend far beyond finance, touching sustainability, health, and prosperity in India's milksheds.




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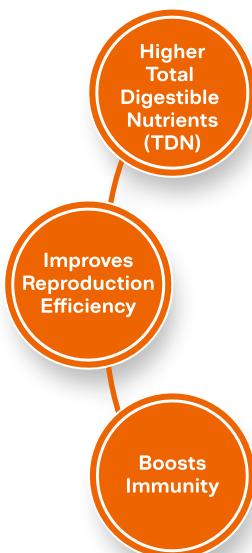
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# Cargill Mycotoxin Survey

January - May 2025

Mycotoxins are secondary metabolites produced by fungi such as Aspergillus, Fusarium, and Penicillium-pose a persistent and evolving threat to feed and food safety globally. In India, the warm, humid climate, combined with faulty agricultural and storage practices, creates a conducive environment for mycotoxin contamination, especially in key feed ingredients like maize, rice by products, corn by products and groundnut meal.

Mycotoxins are an invisible but serious threat to animal productivity and profitability. Through its rolling survey initiative, Cargill empowers feed manufacturers, integrators, and farmers with actionable intelligence to proactively mitigate risk. In a changing climate and evolving agricultural landscape, such continuous monitoring is not just an option-but a necessity-for ensuring feed safety and livestock well-being in India.

## Key highlights of Mycotoxin Survey

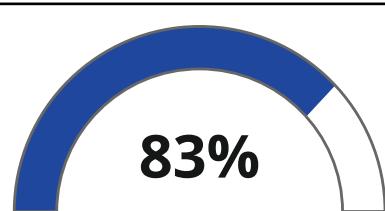
- Total 6304 analysis has been conducted out of which 99% were contaminated with mycotoxins & 83% were

contaminated above threshold risk.

- India comes in severe high risk zone, where 75% - 100% analysed samples were above performance risk level for mycotoxin contamination.
- Aflatoxin is most prevalent mycotoxin followed by T2, DON (Vomitoxin), Zearalenone, and Fumonisin, which all can reduce performance and increase disease incidence in poultry farm operations. They exert their effects through alteration in nutrient content, absorption, and metabolism. Changes in the endocrine function: and suppression of the immune system.
- Certain ingredients consistently exhibit higher susceptibility to specific mycotoxins. Highly contaminated ingredients are: De oiled Rice Bran (DORB), Dried Distillers Grain Soluble (DDGS) specifically corn DDGS and Pea Nut Meal. These ingredients should be used judiciously with precautions. Regular mycotoxin analysis should be

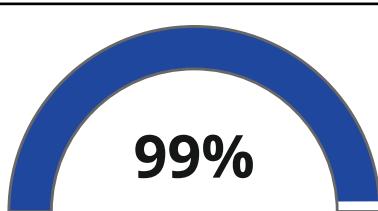
**Total Analyses**

6,304



**Total Contaminated Analyses Above Detection Limit**

6,234



**Percent Analyses Above Cargill Performance Risk Threshold**

**Percent Contaminated Analyses Above Detection Limit**

## Mycotoxin Contamination Pattern

Mycotoxin	Total Analyses	% Contaminated Above Detection Limit	% Contaminated Analyses Above Perf. Risk Threshold	% Analyses Contaminated within Cargill Performance Risk Thresholds-Same period last year
Aflatoxin	6,173	99%	83%	83%
Fumonisin	32	90%	17%	59%
T2 Toxin	35	100%	100%	63%
Vomitoxin	32	100%	45%	93%
Zearalenone	32	97%	72%	86%
<b>Total</b>	<b>6,304</b>	<b>99%</b>	<b>83%</b>	<b>82%</b>

Percent Above Performance Risk

● 0-24% ● 25-49% ● 55-74% ● 75-100%

conducted to know contamination levels.

- Moderately contaminated ingredients are: Corn, Soyabean Meal (SBM) and Broken Rice. Corn is major constitute of poultry feed & being used more than 50%, Therefore, low level of contamination in corn could be highly harmful for bird.
- A major concern identified through the survey is the frequent co-occurrence of multiple mycotoxins in single samples. For example, combinations of aflatoxin, fumonisin, and DON are increasingly

common in raw materials. This synergistic toxicity exacerbates the risk to animal health, often leading to immunosuppression, reduced feed intake, poor performance, and reproductive issues. Multiple mycotoxin co occurrence was 97% in given time period.

#### Mycotoxin Contamination Pattern: Corn

Mycotoxin	Total Analyses	% Contaminated Above Detection Limit	% above Performance Risk	Avg. Contamination (ppb)	Max. Contamination (ppb)	Std Deviation (ppb)	
Aflatoxin	354	93%	71%	18	157	19	
Fumonisin	5	100%	75%	828	1,447	396	
T2 Toxin	5	100%	100%	76	92	18	
Vomitoxin	5	100%	50%	167	239	72	
Zearalenone	5	100%	25%	36	69	19	

#### Mycotoxin Contamination Pattern: Soybean Meal

Mycotoxin	Total Analyses	% Contaminated Above Detection Limit	% above Performance Risk	Avg. Contamination (ppb)	Max. Contamination (ppb)	Std Deviation (ppb)	
Aflatoxin	66	65%	37%	26	107	25	
Fumonisin	10	89%	0%	153	378	122	
T2 Toxin	13	100%	100%	55	111	24	
Vomitoxin	10	100%	44%	318	825	315	
Zearalenone	10	100%	67%	65	184	49	

#### Mycotoxin Contamination Pattern: De Oiled Rice Bran & Rice By Product

Mycotoxin	Total Analyses	% Contaminated Above Detection Limit	% above Performance Risk	Avg. Contamination (ppb)	Max. Contamination (ppb)	Std Deviation (ppb)	
Aflatoxin	5,153	100%	86%	29	280	25	
Fumonisin	10	89%	22%	544	1,826	597	
T2 Toxin	10	100%	100%	76	198	58	
Vomitoxin	10	100%	67%	248	482	121	
Zearalenone	10	100%	100%	201	556	157	

#### Mycotoxin Contamination Pattern: Corn DDGS

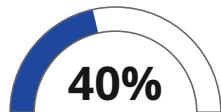
Mycotoxin	Total Analyses	% Contaminated Above Detection Limit	% above Performance Risk	Avg. Contamination (ppb)	Max. Contamination (ppb)	Std Deviation (ppb)	
Aflatoxin	185	100%	93%	126	443	107	



## ANDHRA PRADESH

Nº Samples 15

% above Performance Risk



## RAJASTHAN

Nº Samples 19

% above Performance Risk



Contaminated 15

% Contaminated



Nº Samples 19

% above Performance Risk



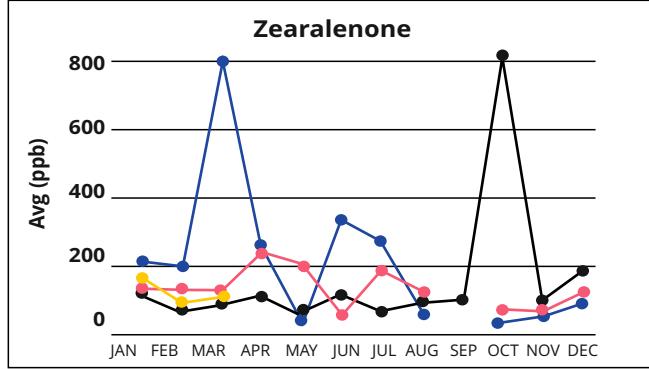
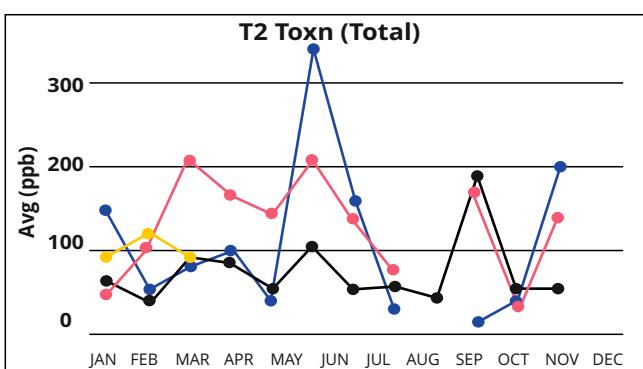
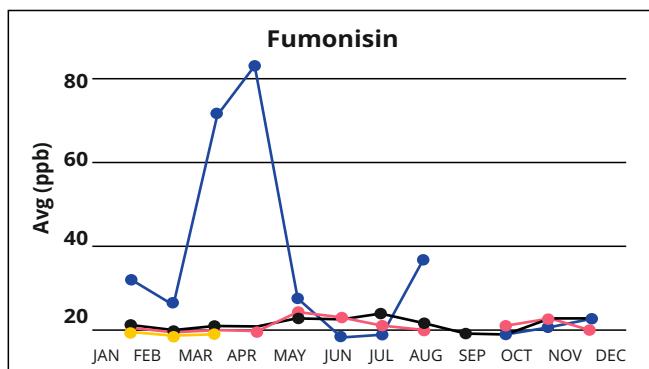
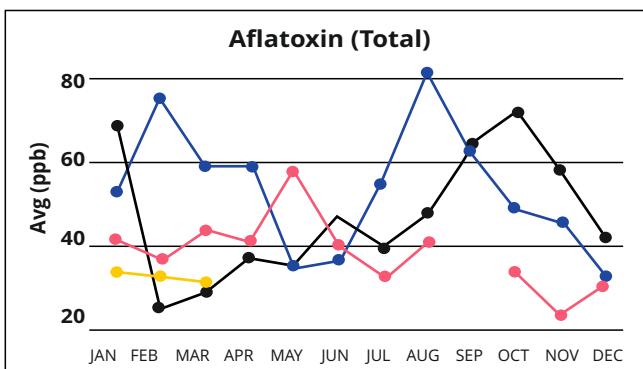
Contaminated 19

% Contaminated



Category	KPI	Haryana	Karnataka	Maharashtra	Punjab	Rajasthan	Andhra Pradesh
General	Nº Samples	444	105	789	3,097	19	15
	Average (ppb)	38	25	20	33	318	33
	Maximum (ppb)	400	145	443	384	1,447	222
	Standard Deviation	53	25	33	33	414	55
Contaminated	Nº Positive	444	102	785	3,097	19	12
	% Contaminated	100%	97%	99%	100%	100%	80%
	Average Contamination in ppb	38	26	20	33	318	42
	Nº Above Performance Risk	433	78	472	2,702	14	8
Above Performance Risk	% above Performance Risk	98%	74%	60%	87%	74%	53%

## Mycotoxin Prevalence Pattern (Yearwise)



Legend ● 2022 ● 2023 ● 2024 ● 2025



# India's Milk Price Surge: Signals from the Summer of 2025

By Jordbrukare

India's milk prices have risen steadily over the past two months, with leading cooperatives and private players hiking retail prices by INR 1-2 per litre. These revisions reflect more than just seasonal volatility—they point to deeper shifts in procurement costs, climate-driven

supply stress, and structural inflation across the dairy value chain.

## Price Adjustments Across Major Brands

Across India's top dairy markets, nearly every major player has adjusted milk prices upward:

Brand	Previous MRP (INR/litre)	Revised MRP (INR/litre)	Price Hike (INR)	Effective Month
Amul	66	68	2	May 2025
Mother Dairy	68	69	1	Late April 2025
Parag (Gowardhan)	66	68	2	May 2025
Heritage	55	57	2	April 2025
OMFED	52	54	2	June 2025
Indore Local Vendors	58	60	2	March 2025
•				

These price shifts have occurred across both liquid milk and value-added segments. While the hikes may appear modest, they signal underlying inflationary momentum building up across the supply chain.

### **Decoding the Drivers of the Price Rise**

#### **1. Climatic Stress and Milk Output Decline**

This year's unusually intense early summer in northern and central India affected feed intake and cow productivity. In several regions, daily milk collections dropped significantly, creating procurement pressure during what is typically the start of the flush-to-lean transition.

As a result, procurement costs in some states increased by INR4-5 per litre at the farmer level. Dairy companies absorbed part of this spike but were compelled to pass on some burden to consumers.

#### **2. Feed and Fuel Price Inflation**

The price of cattle feed remains elevated due to rising costs of raw ingredients like maize and soybean meal. Simultaneously, energy costs—especially diesel—continue to weigh on milk transport and chilling operations. Together, these have contributed to an increase in milk handling costs by 8-10% year-on-year. Private players and cooperatives alike have cited feed cost escalation as a key determinant in their decision to revise pricing.

#### **3. Upward Revision in Procurement Prices**

Several cooperatives have recently revised farmer payout structures upward to ensure viability of production. This includes:

- Raising procurement rates by INR2-3/litre
- Introducing additional incentives for fat content
- Reducing cattle feed prices selectively to retain loyalty

Such adjustments improve rural liquidity but also tighten margins unless accompanied by downstream price corrections.

#### **4. Operational and Regulatory Shifts**

In select regions, state dairy federations raised procurement rates through direct government mandates, especially in eastern states. While this supports farmers, it also compels retail price revisions when cooperative models operate on thin marketing margins.

Simultaneously, the push for better traceability and milk quality has led to higher testing and logistics costs, particularly for organized dairies operating across multiple cities.

### **Consumer Impact and Industry Response**

From the consumer standpoint, these hikes are starting to pinch, especially in urban poor and middle-income households. Surveys indicate that discretionary consumption of premium variants (organic, A2, etc.) has softened, even as base-tier sales remain stable.

Dairy processors, however, maintain that the current hikes are modest and necessary to maintain the viability of the entire supply chain. Most processors point out that these increases are still below overall food inflation levels and are calibrated to avoid consumer backlash.

#### **Looking Ahead: Price Stability or Further Volatility?**

With monsoon progress now underway, the coming weeks will determine the pace of herd recovery, fodder regeneration, and milk flow stability. Early rains in fodder-growing regions could offer some relief.

However, unless broader systemic issues—like climate resilience, feed diversification, and cooperative efficiency—are addressed, such price revisions may become more frequent.

From a macroeconomic perspective, dairy inflation remains a sensitive lever in consumer price indices. Policymakers, therefore, will need to balance farmer support with food affordability measures, possibly through targeted subsidies, procurement incentives, or cold-chain interventions.

#### **Conclusion: A Wake-up Call for Dairy Resilience**

The recent round of milk price hikes is not a blip—it's a signal. It reflects the convergence of climate risks, rural income needs, and cost inflation that India's dairy economy can no longer ignore.

For the dairy industry, the path forward must include:

- Investing in climate-resilient dairy infrastructure
- Scaling regional feed supply chains
- Strengthening milk testing and assurance systems
- Recalibrating cooperative pricing models for long-term sustainability

The summer of 2025 reminds us that milk prices are no longer stable seasonal phenomena. They are now dynamic reflections of India's agrarian shifts—and demand strategic foresight across the dairy boardroom and policymaker tables alike.

## European Dairy Giants DMK and Arla Approve Historic Merger

In a landmark decision set to redefine the European dairy industry, farmer-members of Germany's DMK Deutsches Milchkontor GmbH and Denmark's Arla Foods have overwhelmingly approved a merger between the two cooperatives. This monumental step, pending regulatory clearance, will create one of the world's largest dairy cooperatives, processing an estimated 19 billion kilograms of milk annually.

"This is more than a merger. It's a shared vision for the future of dairy, built on trust, teamwork, and deep commitment to our roots," stated a spokesperson, highlighting the collaborative spirit behind the decision.

### Farmer-Driven Consensus

The approval by shareholders underscores a rare cross-border consensus among dairy producers in Germany, Denmark, and the Netherlands (via DOC Kaas). As farmer-owned cooperatives, both DMK and Arla required member consent, reflecting widespread optimism for a stronger market presence, improved milk prices, and accelerated innovation.

Heinz Korte, Chairman of DMK Group, expressed his delight, saying, "I am delighted that my fellow farmers have approved this merger. I firmly believe it is the right decision for a stronger future." Jan Toft Nørgaard, Chairman of Arla Foods, added, "We now have the opportunity to create even more value together — for our farmers, our customers, and for consumers worldwide."

### Driving Scale, Innovation, and Sustainability

The combined entity will operate under the Arla Foods name, headquartered in Viby J, Denmark, with DMK CEO Ingo Müller taking on a senior executive role for integration. The merger is expected to accelerate innovation in functional and sustainable dairy products, strengthen global competitive positioning, and achieve significant cost efficiencies.

"By joining forces, we're strengthening our ability to deliver nutritious food to more people while ensuring sustainable livelihoods for our farmer-owners," said Peder Tuborgh, CEO of Arla Foods.

The transaction now awaits regulatory approval from EU antitrust authorities, anticipated by late 2025 or early 2026. Following approval, a 24-month transition will commence to harmonize operations. Both cooperatives have assured that farmer members will retain voting rights, and milk collection and payments will continue

uninterrupted.

This merger represents a proactive stride towards resilience and long-term competitiveness in a dairy sector facing volatile markets and evolving demands.

## Canada Establishes First National Foot-and-Mouth Disease Vaccine Bank

Canada has taken a significant step in safeguarding its vital livestock sector by establishing its first national Foot-and-Mouth Disease (FMD) vaccine bank. This initiative dramatically enhances the country's preparedness against potential outbreaks of the highly contagious viral disease, which affects cloven-hoofed animals like cattle, pigs, sheep, and goats.

FMD can cripple the livestock industry, causing painful blisters in infected animals, hindering their ability to eat and walk, and severely disrupting milk production. An outbreak could lead to substantial economic losses and widespread disruption to food supply chains. While Canada has historically relied on strict import controls, robust on-farm biosecurity, and comprehensive disease surveillance, the new domestic vaccine bank provides a crucial additional layer of protection.

Following a competitive procurement process, Public Services and Procurement Canada, on behalf of the Canadian Food Inspection Agency (CFIA), awarded contracts to two leading animal health companies: Boehringer Ingelheim Animal Health and Biogénésis Bagó SA. These partnerships will ensure rapid access to a diverse range of FMD vaccine products, forming the foundation of Canada's domestic stockpile. This complements Canada's existing access to reserves through the North American Foot-and-Mouth Disease Vaccine Bank, creating a comprehensive preparedness strategy.

The establishment of this vaccine bank represents a significant collaboration among federal, provincial, and territorial governments, alongside key stakeholders from the Canadian livestock industry. This coordinated, forward-looking response is integral to Canada's broader FMD preparedness strategy, underscoring the importance of proactive planning for national food security and animal health.

Having a readily accessible stockpile of emergency vaccines will enable Canada to quickly contain and reduce the scale and duration of any future FMD outbreaks. This also helps ensure business continuity for livestock producers and mitigates potential trade disruptions, reinforcing Canada's long-term commitment

to livestock health and agricultural resilience.

## Southern Europe Grapples with First Lumpy Skin Disease Cases in Dairy Cattle

Southern Europe has reported its first cases of Lumpy Skin Disease (LSD) in dairy cattle, signalling a worrying expansion of this economically impactful viral disease. Traditionally found in Africa, LSD has progressively spread across the Middle East and Asia, now reaching deeper into European territories, with recent cases confirmed in Italy and France.

Caused by a Capripoxvirus, LSD manifests in painful skin nodules, fever, lameness, and a significant drop in milk production and fertility. While mortality rates are typically low (under 10%), the disease causes severe economic disruption due to reduced dairy output, diminished hide value, and the high cost of control measures. Transmission primarily occurs through biting insects like mosquitoes, flies, and ticks, but also via direct animal contact and contaminated equipment, making warm, humid environments particularly vulnerable. The region previously experienced LSD outbreaks in Southeast Europe, notably Greece in 2015, which led to emergency vaccination and culling. This re-emergence underscores the ongoing threat. Effective control hinges on homologous LSD vaccination, stringent vector control, rigorous biosecurity measures (including movement restrictions and disinfection), and prompt surveillance and reporting.

For India's dairy industry, which has battled LSD in recent years, these European outbreaks serve as a crucial warning. With increasing global livestock movement and climate-driven vector expansion, heightened vigilance is paramount. Dairy cooperatives in major milk-producing states like Gujarat, Maharashtra, and Tamil Nadu must prioritize LSD surveillance, maintain vaccine stockpiles, and implement robust preventive protocols to safeguard livelihoods and consumer confidence amidst market volatility.

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# Monsoon Races Across North India: From Rajasthan to J&K, a Vital Boost for Agriculture and Dairy Sectors

The Southwest Monsoon has made rapid strides across northern India, bringing much-needed relief and anticipation for farmers and livestock owners. As of mid-June 2025, the monsoon has fully covered significant parts of Rajasthan, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, and Western Uttar Pradesh, with forecasts predicting continued rainfall in the coming days.

This accelerated monsoon progression is critical for regions dependent on rain-fed agriculture and dairy farming, especially in semi-arid belts of Rajasthan and Punjab. With early rains sweeping through key Kharif zones, sowing activities have picked up momentum, and water reservoirs are beginning to replenish.

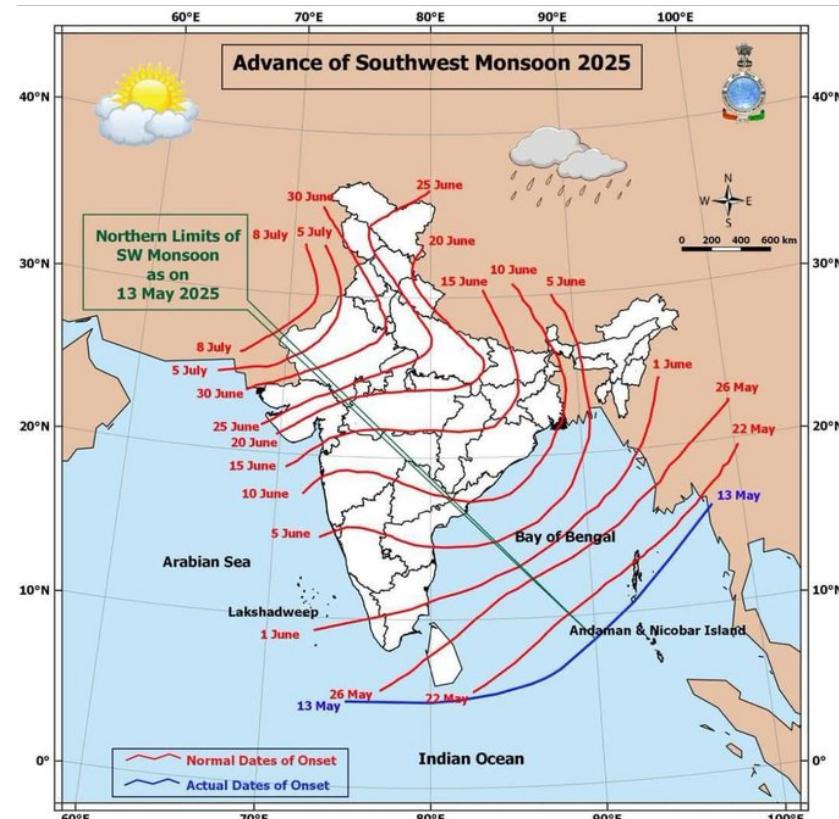
"A swift and widespread monsoon onset is a blessing for India's dairy farmers. It ensures green fodder availability, better hydration for livestock, and supports milk productivity," said Dr. Ramesh Gupta, an agrometeorologist based in Jaipur.

The Indian Meteorological Department (IMD) has issued orange and red alerts for heavy rainfall in the northern hill states and parts of Eastern Rajasthan, warning of possible localised flooding and landslides.

This season, the monsoon covered its trajectory at a pace exceeding standard patterns. The IMD attributes this surge to strong cross-equatorial flows and favourable atmospheric conditions over the Arabian Sea. Key cities, including Jaipur, Dehradun, Shimla, Jammu, and Pathankot, have recorded above-normal rainfall during third week of June. Agricultural experts believe that the timely rains will also enhance the nutritional content and yield of cattle feed crops like maize and bajra, providing a long-term benefit to the dairy industry.

"With improved fodder availability, dairy farmers can reduce dependence on expensive supplements. This directly lowers production costs and helps maintain a steady milk supply," noted Anjali Deshmukh, a dairy development officer in Haryana.

Moreover, the rains help replenish village ponds,



improve pasture growth, and ensure a consistent water supply—factors that collectively boost animal health, fertility rates, and milk yield.

As the monsoon strengthens its grip, authorities are urging farmers to adopt water conservation practices and maintain livestock shelters to prevent disease during prolonged wet spells. With June's rainfall already surpassing seasonal averages in several states, the stage is set for a robust Kharif and dairy season.

India's rural economy is closely tied to the rhythm of the monsoon, and 2025's promising onset offers hope, momentum, and much-needed relief for the farming and dairy sectors across North India.

The Southwest Monsoon has advanced rapidly across northern India by mid-June 2025, bringing significant relief and optimism to the agriculture and dairy sectors. Regions spanning Rajasthan, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, and Western Uttar Pradesh are now fully covered, with forecasts predicting continued rainfall.

This accelerated monsoon progression is vital for areas heavily reliant on rain-fed agriculture and dairy farming, particularly the semi-arid belts of Rajasthan and Punjab. The early and widespread rains have invigorated Kharif sowing activities and begun replenishing water reservoirs. Dr. Ramesh Gupta, an agrometeorologist, noted that "A swift and widespread monsoon onset is a blessing for India's dairy farmers. It ensures green fodder availability, better hydration for livestock, and supports milk productivity."

The Indian Meteorological Department (IMD) has issued alerts for heavy rainfall in the northern hill states and parts of Eastern Rajasthan, cautioning about potential localized flooding and landslides. This season's monsoon covered its trajectory faster than usual, attributed by the IMD to strong cross-equatorial flows and favorable atmospheric conditions over the Arabian Sea.

Key cities including Jaipur, Dehradun, Shimla, Jammu, and Pathankot recorded above-normal rainfall during the third week of June. Agricultural experts anticipate that the timely rains will enhance the nutritional content and yield of cattle feed crops like maize and bajra,

offering long-term benefits to the dairy industry by reducing reliance on expensive supplements. Anjali Deshmukh, a dairy development officer, highlighted that "With improved fodder availability, dairy farmers can reduce dependence on expensive supplements. This directly lowers production costs and helps maintain a steady milk supply."

The rains also replenish village ponds, improve pasture growth, and ensure consistent water supply, collectively boosting animal health, fertility, and milk yield. As the monsoon strengthens, authorities are advising farmers to implement water conservation practices and maintain livestock shelters to prevent disease during prolonged wet spells. With June's rainfall already exceeding seasonal averages in several states, 2025's promising monsoon onset provides much-needed momentum and hope for North India's farming and dairy sectors.

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## India's Green Leap: From Plastic Pledge to Dairy Packaging Promise

India is on an undeniable mission to tackle environmental challenges head-on, weaving sustainable practices into the very fabric of its economy. Gone are the days when climate action felt like a distant dream; today, it's a dynamic reality, driven by proactive policies and a "whole of government, whole of society" approach. The focus has been intensified in recent years, with significant strides being made in plastic waste management and a clear vision for a greener future, as highlighted by Union Environment Minister Bhupender Yadav.

### Tackling Plastic Head-On: Beyond the Ban

Since the nationwide ban on identified single-use plastic (SUP) items on July 1, 2022, India has moved beyond mere prohibition. The push is now strongly towards promoting eco-alternatives, fostering a vibrant ecosystem for their manufacturing. States and local

bodies are actively incentivizing these greener options, leading to innovative business models and a growing compendium of eco-alternative producers. A crucial development in this regard, from April 1, 2024, is the mandate for using recycled content in plastic packaging. This isn't just a rule; it's a game-changer for the recycling industry. It's pushing for "super clean" recycling technologies, transforming what was once waste into valuable resources. With over 130 lakh tonnes of plastic packaging waste already processed since 2022, the combination of the SUP ban and Extended Producer Responsibility (EPR) – where manufacturers are accountable for the entire lifecycle of their plastic products – promises a significant dent in plastic pollution. Further reinforcing this, new Plastic Waste Management (Amendment) Rules, 2025, are set to come into effect from July 1, 2025, requiring QR codes or

barcodes on plastic packaging for enhanced traceability and accountability, bringing greater transparency to what we consume and dispose of.

#### **Global Green Diplomacy: India's Voice on Plastic Pollution**

India isn't just cleaning up its own backyard; it's a key player on the global stage, advocating for a pragmatic and equitable approach to plastic pollution. In negotiations for a legally binding international instrument on plastic pollution, Minister Yadav has consistently stressed the need for a consensus-based framework that directly addresses plastic pollution without hindering the sustainable development aspirations of developing nations. This year, India has reiterated its stance against mandatory limits on primary plastic polymer production, citing economic concerns and emphasizing that the treaty should focus on preventing waste leakage rather than restricting production that supports livelihoods. India firmly believes that developed countries, with their historical responsibility for higher per capita plastic waste, must step up with financial and technical assistance, potentially through a dedicated multilateral fund, to support developing countries in their transition towards sustainable practices. The ongoing INC negotiations for

this global treaty, with a critical session scheduled for August 2025, highlight India's resolve to shape a fair and effective global response.

#### **The Dairy Dilemma: Milking Sustainability in Packaging**

The Indian dairy industry, a powerhouse globally and vital for our food security, presents a unique challenge and opportunity. Projecting a staggering market value of INR 30 lakh crore by 2030, this sector heavily relies on plastics and multi-layer laminates to keep our milk and dairy products fresh and safe. However, with growing environmental concerns and evolving regulations, the industry is at a pivotal moment. The drive for sustainable packaging in dairy isn't just about compliance; it's about future-proofing an industry that touches every Indian household. As new rules on recycled content and traceability come into play, the dairy sector is poised for a significant transformation, moving towards innovative and eco-friendly packaging solutions that align with India's broader green vision.

Source: Time of India

## **dairy dimension**

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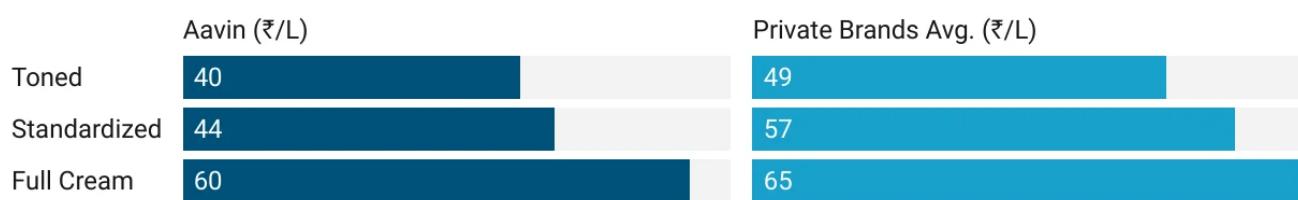
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## Milk Price War



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## Aavin Boosts Chennai Milk Supply to Counter Amul's Entry

Tamil Nadu's state-run dairy cooperative, Aavin, is significantly expanding its milk processing capacity in Chennai to solidify its market position. This strategic move comes as Gujarat-based dairy giant Amul prepares to increase its presence in the region. The Tamil Nadu government has announced plans to double Aavin's daily milk supply potential in Chennai from 11 lakh to 22 lakh litres by March 2026.

This expansion involves developing two major dairy processing units: the Madhavaram Dairy with a 10 lakh litres/day capacity and the Acharapakkam Dairy with a 1 lakh litres/day capacity. These new facilities are crucial as Chennai experiences rising dairy demand and private brands, including Amul, gain market share with often higher prices. Amul's phased rollout of fresh milk in Chennai has intensified competition, prompting Aavin to enhance supply and retain its consumer base.

Despite offering more affordable products—for instance, Aavin toned milk at INR 40/litre compared to private

brands at INR 49/litre—Aavin faces challenges in product visibility and accessibility. Consumers report supply mismatches, with popular variants often restricted to monthly cardholders.

Beyond capacity, Aavin is addressing environmental concerns at its Ambattur facility by upgrading its sewage treatment plant. This new system, certified by IIT Madras, is expected to be operational by late 2025. Additionally, Aavin has provided INR 342.14 crore in procurement incentives to farmers since December 2023, and will review dealer commission rates during future milk price restructuring. Aavin's ability to expand, align with consumer demand, maintain affordability, and ensure environmental accountability will be vital for its success against growing private sector influence in Chennai's competitive dairy market.



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