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Field Peas Offer a Route to Lower Soybean Meal Dependence in Broiler Diets

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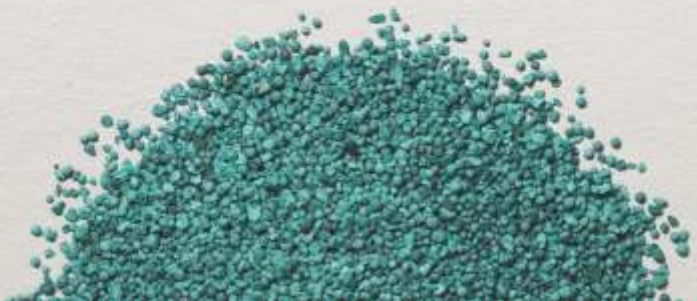
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Field Peas Offer a Route to Lower Soybean Meal Dependence in Broiler Diets



Soybean meal (SBM) remains a major protein source in commercial broiler diets, but dependence on it exposes feed manufacturers to fluctuations in availability, prices and supply-chain risks. Diversifying protein sources is therefore an important area of feed formulation research. A study conducted by researchers at the Poultry Research Foundation, University of Sydney, Australia, has examined the potential of field peas to reduce soybean meal inclusion while maintaining broiler performance.

The 42-day feeding trial involved 300 Ross 308 broilers, randomly allocated to 60 pens and six dietary treatments. Researchers evaluated different levels of soybean meal, with and without field pea inclusion, across four feeding phases: starter, grower, finisher and withdrawal. Field pea inclusion increased progressively from 50 to 120 g/kg of feed, replacing approximately 45% to 100% of soybean meal, depending on the feeding phase and dietary treatment.

The results indicated that field pea inclusion improved growth performance. Body weight gain increased by up to 2.9% over the 42-day period, while feed conversion ratio (FCR) improved by approximately 2.04%. The researchers also reported no significant adverse effects on carcass yield, breast meat yield or fat pad weight.

Field peas offer nutritional characteristics that make them relevant for broiler feed formulation. In the study, they contained approximately 23.2% crude protein and 48.8% starch. Their contribution is not limited to protein; they also influence the dietary starch-to-protein balance. However, their nutritional value must be assessed alongside amino acid availability and digestibility when formulating commercial diets.

One of the study's important findings was the feasibility of formulating finisher and withdrawal diets without soybean meal. These diets included field peas and higher levels of non-bound amino acids, indicating that amino acid balancing is central to successful SBM reduction. The researchers suggested a phase-feeding approach, with field pea inclusion of approximately 5% in starter, 8% in grower, 10% in finisher and 12% in withdrawal diets.

The study also found higher nitrogen retention in birds receiving diets without soybean meal compared with those fed conventional soybean meal levels (72.73% versus 70.26%). This suggests improved utilisation of dietary nitrogen under the tested conditions.

Source: Based on research published by Kandel et al. in Animal Nutrition (2025), Volume 22, pp. 113–126. DOI: 10.1016/j.aninu.2025.03.011

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Image Source: mindthegapalways

From Green Fodder to Stored Safe Feed: A Guide to Silage Management

By **Think Grain Think Feed**

Introduction

India faces a green fodder deficit of about 32% and a dry fodder deficit of around 23%, as per ICAR report. However, whenever, there is an excess green fodder production, part of this could be preserved through controlled fermentation under anaerobic conditions, as "Silage" In fact, silage making is a practical way to conserve surplus fodder harvested during the monsoon and spring seasons, to be used during lean periods. However, the quality of silage depends on its proper preparation, storage and management. Drawing on guidance from extension services, peer-reviewed research and Indian institutions, this article presents a practical guide to silage production and preservation. The objective is not merely to store green fodder, but more importantly, to retain its nutritional value, minimise spoilage, and protect animal health and with no negative effect on food safety from the animal products.

Choose the Right Crop and Harvest it at the Right Stage

According to NDDB, maize, sorghum and oats are among the forage crops suitable for silage production in India. Indian extension sources also recommend pearl millet (bajra) and hybrid Napier as silage crops. Maize is widely used because of its high yield potential, energy-rich forage and adequate fermentable sugar content, which supports efficient fermentation in rumen.

Crop selection should consider local agroclimatic conditions, irrigation availability, expected yield, nutritional requirements and the available storage system.

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Harvest maturity affects digestibility, starch content, moisture and ease of compaction. In maize, harvesting is generally recommended when the grain reaches approximately the half to three-quarter milk line, although the optimum stage varies with the hybrid and growing conditions. This helps achieve a suitable balance between grain development, whole-plant dry matter and ensiling quality.

Moisture management is equally important. NDDB guidance indicates a dry matter content of approximately 30–35% as a practical starting point for suitable fodder, although the optimum range varies by crop and ensiling method. Excessively wet forage can produce nutrient-rich effluent and promote undesirable fermentation, while overly dry material is difficult to compact, allowing air pockets to form and increasing the risk of heating and mould growth. Measuring dry matter before ensiling provides a more reliable assessment of moisture than visual estimation alone.

Before harvesting, producers should assess crop health and avoid incorporating visibly mouldy or severely damaged material. Ensiling does not reliably eliminate mycotoxins already present in contaminated forage. Suspected contamination should therefore be investigated through appropriate sampling and testing, as discussed in the feed safety section below.

Chopping, Filling and Compaction: Establishing Optimal Fermentation Conditions

Harvested forage should generally be chopped into 2–3 cm pieces, as recommended by the National Dairy Development Board (NDDB). Excessively long forage can be difficult to compact, leaving air pockets that increase the risk of spoilage. In maize silage, kernel processing is also important: cracking the kernels improves starch accessibility and utilisation by the animal. Inadequate kernel processing is a recognised silage-management mistake.

Appropriate chop length facilitates uniform filling and effective compaction while helping minimise air entrapment. However, particle size should also be considered alongside crop dry matter, harvesting equipment and the feeding system. When silage is incorporated into the ration, its particle size and inclusion level should help maintain adequate physically effective fibre for normal rumination. During harvesting and handling, care should be taken to prevent contamination with soil, manure and other foreign materials.

The silo should be filled, compacted and sealed as quickly as practicable to minimise oxygen exposure. Spread the chopped forage in uniform layers of approximately 30–45 cm and compact each layer thoroughly before adding the next. Effective compaction expels trapped air and promotes the anaerobic conditions required for effective fermentation.

Under anaerobic conditions, lactic acid bacteria ferment water-soluble carbohydrates into organic acids, principally lactic acid. The resulting decline in pH suppresses many undesirable microorganisms and helps preserve nutrients. Inadequate compaction or delayed sealing prolongs oxygen exposure, increasing the risk of heating, nutrient losses and spoilage.

Sizing a Pit: Calculating Storage Requirements

Well-compacted maize silage may weigh approximately 20–25 kg per cubic foot, although actual density varies with dry matter content, chop length and compaction. A farm with 10 adult animals consuming 20 kg of fresh silage per head per day would require 200 kg daily. Over a 180-day lean season, this amounts to 36 tonnes of silage.

At an assumed density of 20–25 kg per cubic foot, the calculated storage volume would be approximately 1,440–1,800 cubic feet (41–51 cubic metres), before accounting for storage and feed-out losses. Additional capacity should be provided based on expected losses and the farm's feeding and storage practices. The silo

dimensions should also allow sufficient silage to be removed from the exposed face each day to minimise deterioration during feed-out.

Commercial operations should use suitable machinery and ensure that silo structures can safely withstand filling and storage loads. Personnel must remain clear of moving machinery and avoid standing on unstable or steep silage faces. Safe operating procedures are essential throughout filling, compaction and subsequent feed-out.

Sealing and Fermentation: Protecting the Stored Crop

Immediately after filling and compaction, seal the silo with a good-quality polythene sheet or oxygen-barrier silage cover. Secure the edges tightly to minimise oxygen entry and prevent rainwater infiltration. Ensure effective compaction before sealing, protect the cover from punctures caused by birds, rodents, sharp objects or machinery, and inspect it regularly. Repair any damage promptly using compatible repair materials, and provide adequate drainage to prevent water accumulation around the silo.

Oxygen ingress caused by inadequate compaction, delayed sealing or damaged covers encourages yeast and mould growth, resulting in heating, nutrient losses and deterioration of silage quality. Effective sealing is particularly important during prolonged storage and in regions experiencing heavy rainfall or fluctuating temperatures.

Once sealed, the silo should remain closed during fermentation. Under anaerobic conditions, lactic acid bacteria convert water-soluble carbohydrates into organic acids, primarily lactic acid. The resulting decline in pH helps preserve the forage by suppressing many undesirable microorganisms.

NDDB recommends allowing silage to ferment for at least 45 days before opening for feeding. This should be treated as a practical minimum rather than a guarantee of quality or safety, as the fermentation process and final silage quality also depend on the crop, dry matter content, packing, sealing and storage conditions.

Microbial Hazards and Other Feed Safety Risks

- **Listeriosis:** Listeria monocytogenes is an environmental bacterium found in soil and decaying organic matter that can contaminate forage during harvesting and handling. Poorly fermented silage, particularly material exposed to air at the surface, silo edges or damaged areas, can provide conditions favourable for its persistence or growth. Listeriosis can cause neurological disease, reproductive losses and abortion in livestock, with sheep and goats being particularly susceptible to the neurological form.

  Prevention depends on minimising soil contamination, achieving rapid acidification, maintaining effective compaction and sealing, and promptly repairing damaged covers.

- **Botulism:** Botulism is a potentially fatal disease caused by toxins produced by Clostridium botulinum. In silage, a major risk arises when carcasses of rodents, birds or other small animals contaminate the forage, particularly when fermentation is inadequate and the pH remains high. Contamination from manure or poultry litter can also introduce clostridial organisms into the forage.

  Prevention involves inspecting fields before harvesting, avoiding soil and manure contamination, ensuring rapid and effective fermentation, and excluding animal carcasses from stored forage.

- **Clostridial (Butyric) Fermentation:** Clostridial fermentation can occur when forage is excessively wet, contains insufficient fermentable sugars or is contaminated with soil. Instead of desirable lactic acid fermentation, clostridia may produce butyric acid, ammonia

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and other undesirable fermentation products, reducing the nutritional value and palatability of silage. A strong rancid or putrid odour, high moisture content and poor acidification can indicate faulty fermentation. Feeding such silage may reduce intake and milk production and increase the risk of metabolic disorders, including ketosis, in dairy cows.

- **Moulds and Mycotoxins:** Mycotoxins are toxic secondary metabolites produced by certain fungi that can contaminate forage before harvest or develop during storage under favourable conditions. Field fungi, including Fusarium species, can produce mycotoxins such as deoxynivalenol (DON) and zearalenone, while storage moulds, including Penicillium roqueforti, may grow wherever oxygen enters poorly sealed or damaged silage. Other mycotoxins, including aflatoxins and fumonisins, may also occur, depending on the crop and contamination conditions.

  Although effective ensiling helps preserve forage through desirable fermentation, it does not reliably eliminate mycotoxins already present in contaminated material. Moreover, mycotoxins may be present even when no visible mould is detected. Aflatoxin B1 warrants particular attention in dairy production because cattle can metabolise it into aflatoxin M1, which may be excreted in milk and pose a food safety concern.

  Prevention involves growing healthy crops, harvesting at the appropriate stage, minimising soil contamination, and ensuring effective compaction, airtight sealing and proper storage. Careful feed-out management also helps limit oxygen exposure and storage mould growth. Where persistent problems such as reduced feed intake, reproductive disturbances or unexplained health issues arise, appropriate sampling and laboratory testing can help assess potential mycotoxin contamination.

- **Nitrates:** Nitrate accumulation can occur in forage crops such as sorghum, maize and pearl millet when growing conditions or nitrogen fertilisation favour excessive nitrate uptake. The risk may increase during drought, prolonged cloudy weather or irregular rainfall, particularly when nitrogen fertiliser has been applied heavily. High nitrate concentrations in forage can cause toxicity in livestock, especially ruminants.

  Although ensiling can reduce nitrate concentrations, the extent of reduction varies and the process does not guarantee that the resulting silage is safe. Under certain conditions, fermentation can also release nitrogen oxides. Raising the cutting height may help reduce nitrate intake because concentrations can be higher in the lower stem. Crops suspected of nitrate accumulation should therefore be tested before feeding.

Recognising and Investigating Suspect Silage

Good-quality silage generally has a clean, pleasantly fermented or acidic smell, with no extensive visible mould or signs of putrefaction. Abnormal heating, sliminess, heavy mould growth, a rotten odour or substantial soil contamination are warning signs of deterioration. However, these observations provide only preliminary indications of quality. Apparently normal silage may still contain mycotoxins, while visual inspection and smell cannot identify specific toxins or confirm their absence.

Where mould growth, unusual heating, suspected contamination or unexplained animal-health

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and milk-quality problems raise concerns, isolate the affected material and seek advice from a veterinarian, animal nutritionist or feed-testing laboratory. Representative samples should be collected and analysed by a suitably accredited laboratory. Mycotoxin-binding or detoxification products, if required, should be used only under professional guidance, with demonstrated efficacy against the specific toxin and in accordance with applicable regulations.

Feed-Out Management: Maintaining Silage Quality After Opening

Opening the silo exposes silage to oxygen, allowing yeasts and other aerobic microorganisms to become active. Their growth can cause heating, nutrient losses and deterioration, even when the forage was initially well preserved.

To minimise aerobic spoilage, expose only the area required for feeding and maintain a firm, even silo face. Remove silage cleanly without unnecessarily loosening or disturbing the remaining material, and minimise the time the exposed face remains in contact with air. The daily removal rate should be sufficient to limit deterioration and will depend on silo dimensions, ambient temperature, silage stability and feeding requirements. Protect stored silage from rainwater and avoid leaving loose material exposed to air for prolonged periods.

During feed-out, inspect silage for abnormal heating, discolouration, visible mould, unusual odours and other signs of deterioration. Segregate suspect material and do not mix it with good-quality feed to conceal spoilage. Normal appearance and smell do not guarantee the absence of mycotoxins.

Incorporate silage into a balanced ration according to its nutrient composition and the animals' requirements. The appropriate inclusion rate depends on species, body weight, milk yield, stage of lactation, physiological status and silage quality. Introduce dietary changes progressively and seek advice from a qualified animal nutritionist or veterinarian where necessary, particularly when formulating rations for high-producing dairy animals.

Maintain clean feed bunks, storage areas, mixing and feeding equipment. Remove spoiled residues promptly, minimise prolonged feed exposure and excessive refusals, and provide continuous access to clean drinking water. These practices help maintain feed hygiene and reduce avoidable losses.

Silage Additives: Useful Tools, Not Substitutes for Good Practice

Silage additives can support desirable fermentation and help improve aerobic stability when selected and applied appropriately. Microbial inoculants containing suitable lactic acid bacteria strains can promote fermentation, while selected chemical additives may inhibit yeasts and moulds or improve stability during feed-out. Their effectiveness depends on the crop, dry matter content, prevailing conditions, application method and specific product formulation.

Additives cannot compensate for excessively wet or dry forage, inadequate compaction, delayed sealing or damaged silo covers. Conventional silage additives should not be assumed to eliminate mycotoxins already present in contaminated forage. Product selection should be based on the intended outcome, scientific evidence of efficacy, label instructions and advice from a qualified livestock nutritionist or extension professional.

Sound silage-making practices remain the foundation of successful preservation. Additives should be used selectively to address specific management needs rather than as a substitute for good harvesting, compaction, sealing and storage practices.

The Indian Picture: Growing Adoption of Silage Production

Silage production in India is expanding, particularly in the north-west, supported by initiatives from dairy institutions, agricultural

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research organisations and state agencies. Different storage systems and production models are helping farmers adopt silage-making according to their scale of operation and feeding requirements.

- NDDB initiatives: It has promoted silage-making using surface silo bunkers with capacities ranging from 3 to 500 tonnes. Its models include a low-cost cooperative model at Mujkuva in Anand, Gujarat, and Katewadi in Baramati, Maharashtra, alongside a large-scale commercial model in Guntur, Andhra Pradesh. Demonstrations have supported the adoption of silage-making technology across several Indian states.
- ICAR-Indian Institute of Maize Research (IIMR), Ludhiana: It promotes the maize silage value chain in Punjab and Haryana. Its initiatives include pit, drum, bag and bale silage systems suited to farmers with different storage capacities. More than 1,000 farmers and dairy stakeholders have been trained, and feeding trials reported milk yield improvements of 10 to 20 per cent with whole-plant maize silage.
- Punjab Agro Industries Corporation (PAIC): PAIC produces baled maize silage in 100 kg and 400 kg formats, wrapped in UV-resistant stretch film. The reported specifications include a shelf life of approximately 18–24 months, a target pH of 3.7–4.2 and a dry matter content of 30–38%.
- Baled silage for smallholders: Baled silage can be particularly useful for small dairy farms that cannot consume large quantities of pit-stored silage quickly enough after opening. Each bale functions as an individually small sealed silo, helping limit oxygen exposure until opened. However, the plastic wrap must remain intact. Any punctures or tears should be repaired promptly with suitable silage tape.
- Evidence from Punjab: A 2026 study published in the Indian Journal of Dairy Science surveyed 385 silage-making farmers in Punjab. Most respondents used pit silos, while others used stack silos. The silage samples were generally reported to be of good quality, with an average pH of approximately 4.3 and dry matter content of around 29.5%.

Building a Reliable and Safe Silage Supply Chain

Safe silage production requires coordinated quality management across the dairy value chain. Farmers need practical training in crop selection, dry matter assessment, harvesting and silo management, while contractors and commercial silage producers must ensure appropriate chopping, effective compaction, airtight sealing and systematic quality control.

For India's dairy sector, wider adoption of silage should be supported by access to moisture-measurement tools, suitable storage infrastructure, regular inspections and risk-based laboratory testing. Maintaining records of crop origin, harvest date, dry matter content, additives used, storage conditions and silo opening dates can improve traceability and help identify recurring quality problems. Dairy cooperatives, feed manufacturers, veterinarians, animal nutritionists and testing laboratories can further support quality assessment, balanced ration formulation and timely investigation of suspected contamination.

By combining sound silage-making practices with effective quality assurance and collaboration across the value chain, India's dairy sector can preserve forage nutrients, reduce avoidable losses and improve year-round fodder availability. However, good preservation does not guarantee freedom from mycotoxins or other contaminants. Risk-based testing, appropriate corrective measures and professional guidance remain essential whenever feed safety is uncertain. Together, these measures can strengthen feed safety while supporting animal health, dairy productivity and milk safety.

Strengthening India's Poultry Sector: Innovation, Feed Security and Global Opportunities

In an exclusive interaction with Think Grain Think Feed, Uday Singh Bayas, President, IPEMA–Poultry India, shares his insights on the growth and global positioning of India's poultry sector, the vision behind the 18th Poultry India Expo 2026, and the role of Poultry Knowledge Day in driving innovation and productivity. He also discusses key industry challenges, including feed raw material price volatility, export opportunities, policy engagement and the need for stronger industry–academia collaboration to build a competitive and sustainable poultry ecosystem.



Uday Singh Bayas

Poultry India has evolved into a prominent platform for the poultry industry since its inception in 2007. What is the vision for the 18th edition, and what key developments set this year's event apart?

The vision for the 18th Poultry India Expo 2026 is to further establish it as the world's largest international poultry exhibition under the theme "One Nation, One Expo"—a unified platform bringing the entire global poultry value chain to India.

Since its inception in 2007, the event has grown from a modest, single-hall exhibition into a major international gathering, alongside established global platforms such as IPPE Atlanta and EuroTier.

Building on last year's record participation of over 500 exhibitors and 51,251 industry visitors across 35,000 sq. metres in seven air-conditioned halls, this year we are targeting 550+ exhibitors and more than 51,000 industry professionals from over 125 countries.

The 2026 edition will place greater emphasis on innovation, collaboration and knowledge sharing, supported by stronger international participation through partnerships with more than 20 overseas poultry associations and 40+ national bodies. Beyond scale, our focus is on creating meaningful business opportunities, encouraging technology adoption and facilitating industry dialogue in line with India's poultry growth story and the vision of Viksit Bharat.

Poultry Knowledge Day is an integral part of the event. What are the key themes and technical topics being covered this year, and how will they help the industry address emerging

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challenges and improve productivity?

Scheduled for 24 November 2026 at HICC/Novotel, Hitech City, Hyderabad, Poultry Knowledge Day is IPEMA's flagship technical conference, expected to bring together over 2,000 delegates.

With more than 10 national and international speakers, the conference will cover key areas including poultry health and biosecurity, precision nutrition, feed efficiency, farm automation, smart farming, sustainability and technology adoption.

The discussions will address some of the industry's pressing challenges, including disease threats, rising input costs and resource optimisation. By bringing scientific research and global best practices closer to farmers and industry professionals, the sessions aim to offer practical insights that can be applied at the farm level.

The larger objective is to encourage knowledge exchange among scientists, veterinarians, farmers and industry stakeholders, helping improve productivity, strengthen animal health, reduce losses and support sustainable growth across the poultry value chain.

Volatility in feed raw material prices remains a major concern for India's poultry sector. How can Poultry India Expo facilitate dialogue, knowledge sharing and technology adoption to help stakeholders manage feed costs and improve production efficiency?

Feed raw material price volatility, particularly concerns around maize cost and availability, continues to be a major challenge for India's poultry sector. Poultry India Expo provides an important platform for farmers, feed manufacturers, nutritionists, researchers, equipment suppliers and policymakers to exchange ideas and explore practical solutions.

Poultry Knowledge Day will address areas such as precision nutrition, feed planning, enzyme and feed additive technologies, and feed optimisation. Meanwhile, the exhibition will showcase advanced feed milling equipment, automation and precision feeding solutions that can help improve feed conversion and minimise wastage.

IPEMA also works throughout the year to bring industry concerns into wider discussions. Through its engagement with the CII National Committee on Animal Agriculture, government bodies and industry associations, it contributes to dialogue on issues affecting the poultry value chain, including maize availability, feed prices and production efficiency.

Technical seminars and platforms such as VETCONVERGENCE 2026, which brought together over 30 Vice-Chancellors and scientific and industry leaders, further strengthen knowledge sharing and collaboration between industry and academia.

With global demand for poultry products growing, what opportunities does India have to strengthen its export presence? What are the key challenges that need to be addressed in terms of disease management, food safety, infrastructure and international market access?

India's poultry sector is growing steadily, supported by rising domestic demand, increasing purchasing power and greater awareness of protein-rich nutrition. India is the world's second-largest egg producer, with production increasing from 142.77 billion eggs in 2023–24 to 149.11 billion in 2024–25. It also ranks among the top four broiler-producing nations.

With chicken meat production growing at 8–10% and egg production at 6–8% annually, India has considerable potential to strengthen its position in international markets. Growing demand from Gulf countries such as the UAE and Oman, along with opportunities in egg products, offers scope for further export expansion. Recent export growth also reflects the sector's ability to serve international markets.

However, realising this potential will require sustained efforts in disease management and farm biosecurity, food safety, processing standards, modern infrastructure and

cold-chain logistics. Compliance with international sanitary and phytosanitary (SPS) requirements, along with improved cost competitiveness and market access, will be equally important.

Poultry India Expo 2026 provides a platform to facilitate global partnerships and exchange of knowledge and technology, helping the industry address these challenges and strengthen India's export readiness.

How is IPEMA engaging with government bodies, industry associations and research institutions to address key industry concerns, promote technological advancement and support the sustainable growth of India's poultry sector?

IPEMA–Poultry India actively engages with government bodies, industry associations and research institutions to address key concerns and support the long-term development of India's poultry sector. Our engagement includes the Department of Animal Husbandry & Dairying, state governments and national platforms such as the National Livestock Mission. IPEMA is also part of the CII National Committee on Animal Agriculture, collaborating on the initiative "Unlocking the Potential of India's Poultry Sector."

We work closely with over 40 national poultry associations, including NECC, TPF, PFI and IPSA, more than 20 international poultry associations, and leading research institutions such as ICAR. Our engagements include interactions with Telangana State Animal Husbandry Minister Shri Vakiti Srihari, participation in the National Dialogue on Poultry Meat Exports at ICAR–NMRI, and representation at the Telangana Rising 2047 Summit.

These platforms help bring industry concerns relating to maize availability, feed costs, marketing, education, antimicrobial resistance (AMR) and export readiness into policy discussions, including engagements with the governments of Telangana and Uttar Pradesh.

Industry–academia collaboration is another important focus. Initiatives such as the Vice-Chancellors' Conclave in Lonavala, the AMR Stewardship Drive at ICAR–NIVEDI and IPSACON 2025 have created opportunities for scientific exchange.

VETCONVERGENCE 2026, the second Vice-Chancellors' Conclave held in Hyderabad, brought together over 30 Vice-Chancellors and leaders from science and industry to strengthen this collaboration.

Through policy advocacy, technical dialogue, research partnerships and industry alliances, IPEMA aims to encourage technological advancement, strengthen biosecurity, promote sustainability and support farmers, nutritional security and rural livelihoods.

What message would you like to share with poultry farmers, feed manufacturers, equipment suppliers and other industry stakeholders attending Poultry India Expo 2026? What opportunities should they look forward to at this year's event?

I warmly invite poultry farmers, feed manufacturers, equipment suppliers, integrators, veterinarians, researchers and all industry stakeholders to join us at the 18th Poultry India Expo 2026 at HITEX Exhibition Centre, Hyderabad.

Under the banner "One Nation, One Expo," the event will bring together the global poultry community to explore new technologies, automation, nutritional innovations, biosecurity solutions and sustainable practices. It will also provide valuable opportunities to interact with industry leaders and build business connections with participants from over 125 countries.

Aligned with the Hon'ble Prime Minister Narendra Modi's vision of Atmanirbhar Bharat, Viksit Bharat and Vision 2047, we believe that a strong, self-reliant and technologically advanced poultry ecosystem is essential for India's development.

I encourage all stakeholders to make the most of this platform to exchange ideas, explore new opportunities and contribute to a more productive and competitive poultry sector.

I look forward to welcoming you all to Hyderabad!



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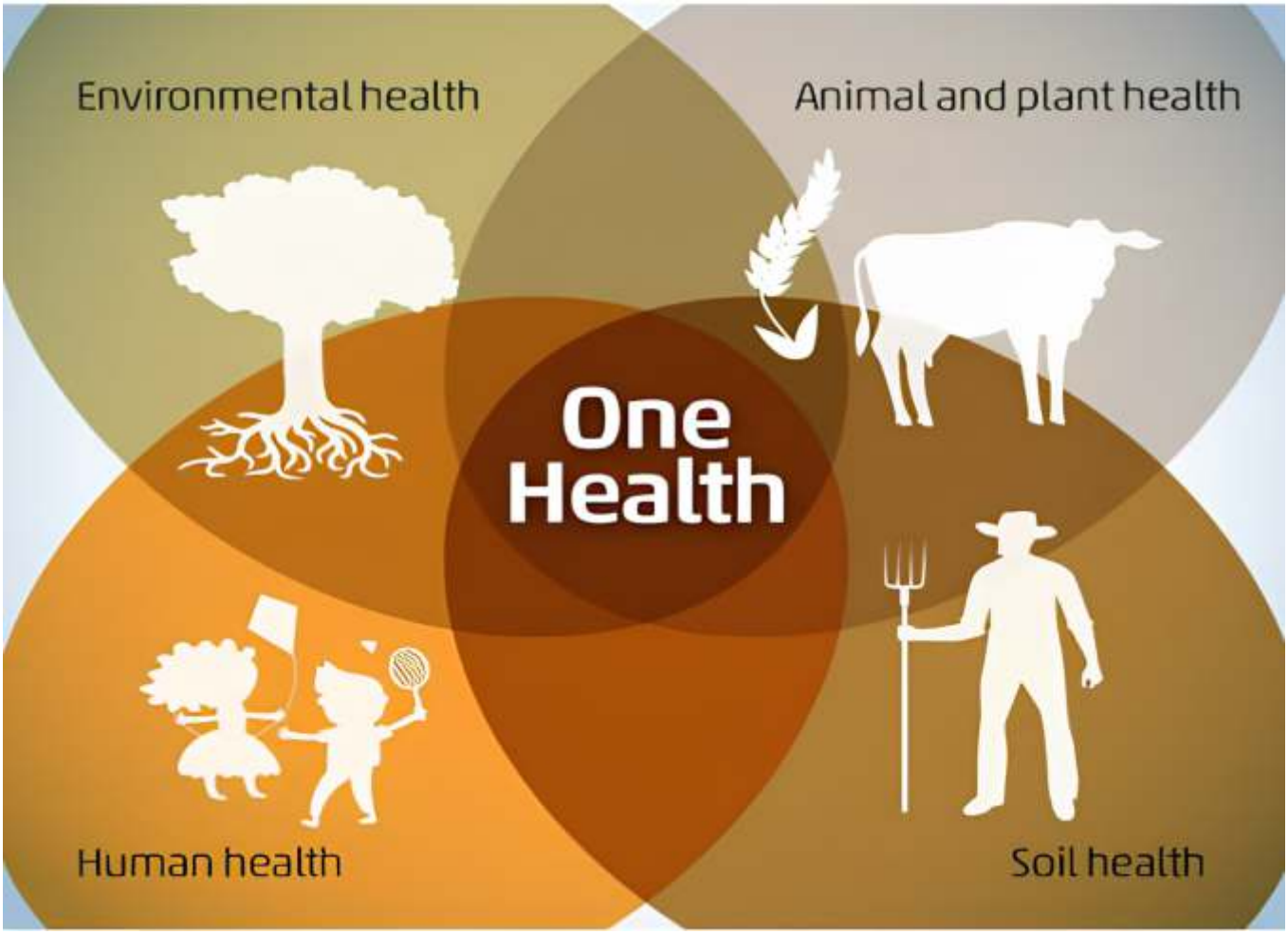
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One Health: The critical link between Soil health, Animal Health and Food Safety

By **Dr. Amit N. Sharma, Dr. Tushar S. Gongale,** Godrej Agrovet Ltd.



Dr. Amit N. Sharma

Introduction

The One Health approach recognises the interconnectedness of human, animal, plant and environmental health, emphasising the need for coordinated action across disciplines and sectors to address shared health challenges. Although soil health is not explicitly identified as a standalone component of the One Health framework, soil degradation and contamination can have far-reaching implications for agricultural productivity, animal health, food safety and public health.

Soil forms the foundation of the feed–food production chain, influencing crop and fodder nutrition, the accumulation of chemical contaminants and heavy metals, and the movement of biological hazards into livestock production systems. Contaminated feed and fodder can compromise animal health and productivity while introducing chemical residues, mycotoxins and foodborne pathogens into products such as milk, meat and eggs.

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Similarly, inappropriate antimicrobial use and the spread of antimicrobial-resistant microorganisms across agricultural and livestock systems pose risks to both animal and human health. In India, intensive agricultural practices, excessive or imbalanced fertiliser and pesticide use, improper disposal of agricultural and livestock waste, soil erosion and salinity can adversely affect soil quality and the safety of crops and fodder.

Integrating soil health into the One Health framework is therefore essential to reducing contamination across the food chain, strengthening agricultural resilience and safeguarding public health.

Soil pollution and declining fertility: An emerging concern

Soil pollution is a major environmental challenge with implications for plant, animal and human health. Agricultural and industrial activities can introduce heavy metals, persistent organic pollutants (POPs), pesticides, pathogens and microplastics into agricultural soils. These contaminants can disrupt soil ecosystems, impair fertility and enter the food and feed chains through crops and fodder, potentially accumulating in animal tissues and products such as milk and meat.

Soil degradation is further compounded by salinity and sodicity. Approximately 6.73 million hectares of land in India are affected by salinity, while sodic soils are characterised by excessive exchangeable sodium, poor soil structure, reduced water infiltration and limited nutrient availability. These conditions restrict plant growth, disturb beneficial microbial communities and reduce agricultural productivity.

Nutrient deficiencies present another significant challenge. Assessments based on Indian Soil Health Card data indicate that 64% of soil samples are low in nitrogen and 48.5% are low in soil organic carbon. Some soil fertility studies have also reported deficiencies in available phosphorus in approximately 90% of samples and potassium in around 50%. Further assessments across 29 states indicate deficiencies of approximately 41% in sulphur, 36% in zinc and 23.2% in boron, alongside deficiencies in iron, manganese and copper.

These findings highlight the widespread and often multiple nutrient deficiencies affecting Indian soils. Addressing them requires balanced fertilisation, improved organic matter management and integrated soil fertility practices tailored to local soil conditions.

Balanced nutrient management for sustainable agriculture



Dr. Tushar S. Gongale

India's increasing dependence on chemical fertilisers reinforces the need to place soil health at the centre of sustainable agricultural development. Fertiliser consumption reportedly increased from approximately 92 kg/ha in 2001–02 to 150 kg/ha in 2024–25, reflecting growing nutrient demand.

However, fertiliser application remains heavily skewed towards nitrogen. Against a recommended Nitrogen:Phosphorus:Potassium (N:P:K) ratio of 4:2:1, India's fertiliser consumption ratio reportedly shifted from 6.6:2.6:1 in 2018–19 to 10.9:4.4:1 in 2023–24, having reached 11.8:4.6:1 in 2022–23. Such imbalances can contribute to the depletion of other essential nutrients and the deterioration of soil health when nutrient management is not guided by soil testing.

Maintaining soil fertility requires a more integrated approach that combines chemical fertilisers with organic manure, crop-residue recycling, biofertilisers and soil-test-based nutrient management. Sustainable land-use practices, pollution monitoring, phytoremediation and

bioremediation can further support the restoration of degraded soils and help minimise environmental contamination.

Together, these measures can improve crop and fodder quality, reduce the movement of contaminants through the food chain and strengthen the Soil–Crop/Fodder–Animal–Food–Human Health pathway that underpins the One Health approach.

Soil microbiome and mineral nutrition: Foundations of animal productivity

Soil health influences livestock productivity not only through the quantity and quality of available feed but also through the nutritional composition of crops and fodder. Minerals are essential for structural development, metabolism, enzymatic activity and physiological regulation in animals. Variations in soil mineral availability can affect the mineral composition of feed, influencing animal growth, reproductive efficiency and overall productivity.

The soil microbiome is another critical component of soil health. It comprises bacteria, fungi, archaea and other microorganisms that interact with plant roots, improve nutrient and water availability, contribute to nitrogen cycling and support plant growth. Unsustainable agricultural practices and poor land management can alter these microbial communities, affecting soil fertility and ecosystem functioning.

Global food security depends not only on current agricultural output but also on the capacity of farming systems to sustain production over the long term. Protecting soil biodiversity, maintaining organic matter and adopting sustainable soil management practices are therefore essential to preserving agricultural productivity, strengthening climate resilience and ensuring a reliable supply of safe, nutritious feed and food.

Feed safety and antimicrobial resistance: Connecting agriculture with public health

Antimicrobial resistance (AMR) represents a major One Health challenge because resistant microorganisms and antimicrobial resistance genes can move between animals, humans and the environment. In livestock production, inappropriate antimicrobial use, including use at subtherapeutic levels for growth promotion or routine prophylaxis, can exert selective pressure on microbial populations. Resistance genes exert selective pressure on gastrointestinal microbiota accelerating horizontal gene transfer, including mechanisms involving plasmids, transposons and integrons. Resistant bacteria and resistance genes can subsequently enter the environment through manure, agricultural runoff and inadequately managed livestock waste, potentially contaminating soil and water and contributing to their spread across ecosystems.

Addressing AMR requires responsible antimicrobial use, stronger veterinary oversight, effective farm biosecurity, improved waste management and coordinated surveillance across human, animal and environmental health systems.

Feed safety is equally important. Chemical contaminants, heavy metals, pathogens and mycotoxins can compromise animal health and productivity while creating potential risks for consumers. Mycotoxins are toxic secondary metabolites produced by fungi, including species of Aspergillus, Fusarium and Penicillium. Their occurrence in feed ingredients can be influenced by environmental conditions, crop stress, harvesting practices and storage management.

Aflatoxin contamination is particularly significant in dairy production. After animals consume feed contaminated with aflatoxin B1, the toxin can be metabolised in the liver into aflatoxin M1, which may be secreted into milk. Reported

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carry-over rates range from 0.3% to 6.2%, depending on factors such as milk yield and animal physiology.

Aflatoxin M1 is classified as a Group 1 carcinogen and can persist through conventional milk processing, including pasteurisation and ultra-high-temperature treatment. Consequently, controlling contamination at the feed stage is critical to protecting milk safety. The Codex Alimentarius Commission has established a maximum level of 0.5 µg/kg for aflatoxin M1 in milk, while the European Union applies a stricter limit of 0.05 µg/kg. These risks reinforce the importance of regular feed testing, appropriate storage, effective mycotoxin management and robust quality-control systems throughout the feed–food chain.

Feed hygiene: Controlling hazards from raw materials to the farm

Feed hygiene is a critical component of the One Health approach and must extend across the entire feed supply chain—from raw material sourcing, transportation, storage and handling to manufacturing, processing, packaging, distribution and on-farm feeding. Contamination at any stage can compromise animal health, reduce production efficiency and introduce hazards into the human food chain.

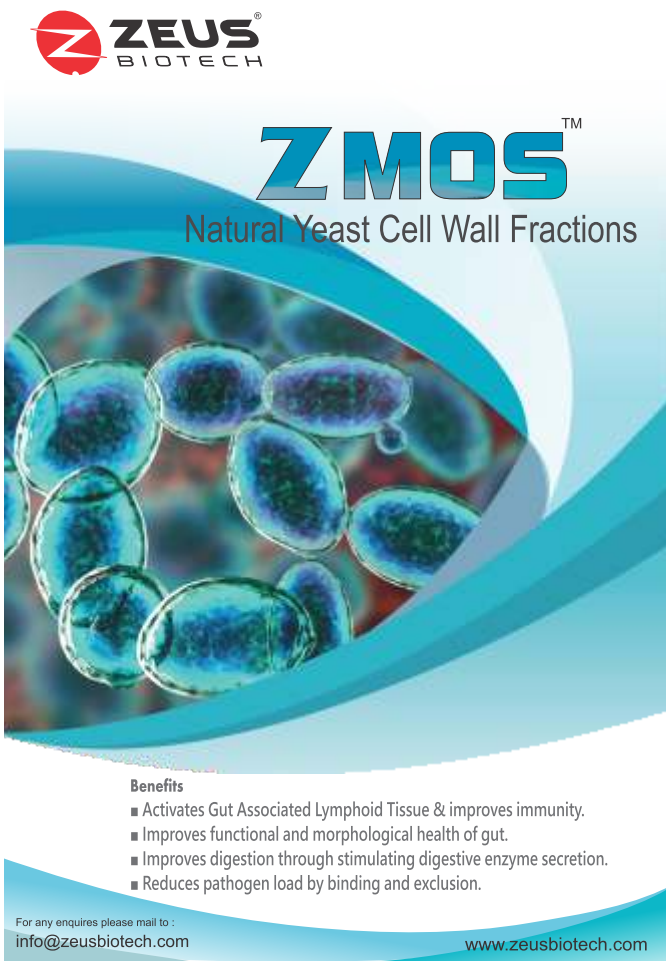
At feed manufacturing plants, incoming raw materials should be assessed for relevant hazards, including mycotoxins, pathogenic microorganisms, pesticide residues and heavy metals. Proper warehouse sanitation, moisture control, ventilation and effective pest and rodent management are essential to prevent contamination during storage.

Within the manufacturing process, routine cleaning and maintenance of grinders, mixers, conveyors, pelletisers, coolers and storage silos help minimise microbial build-up and cross-contamination. Appropriate temperature and moisture management during conditioning, pelleting, cooling and storage can limit microbial proliferation and fungal growth. However, pelleting alone cannot guarantee the elimination of pathogens or preformed mycotoxins; appropriate hazard controls and verification remain necessary.

Implementing Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP), routine microbiological and chemical monitoring, and batch-level traceability can help identify and control hazards throughout production and distribution. These systems should be complemented by documented sanitation procedures, supplier assessments and corrective actions when contamination is detected.

Feed hygiene must continue at the farm level. Clean, dry storage areas, hygienic feeding equipment, rodent and insect control, and protection against contamination from animal faeces, soil and stagnant water are essential to preserving feed quality. Regular inspection of storage facilities and feeding systems can help identify moisture ingress, spoilage and other potential sources of contamination.

Pathogens such as Salmonella enterica, Clostridium perfringens and Escherichia coli are relevant



to feed hygiene and food safety. In particular, Salmonella can survive for extended periods in low-moisture feed environments and may persist despite some thermal processing treatments. Contaminated feed can introduce the pathogen into poultry production systems, while infected birds and contaminated environments can contribute to its spread. Subsequent contamination of meat or eggs may expose consumers to salmonellosis, which can cause serious illness, particularly in vulnerable individuals.

An effective feed hygiene programme therefore requires a preventive, end-to-end approach that combines raw material testing, process controls, sanitation, traceability and farm-level biosecurity. By reducing biological and chemical hazards at multiple control points, the feed industry can help protect livestock productivity, improve food safety and strengthen the One Health framework.

Silage management: Protecting animal health and the environment

Silage preservation is another important control point within the One Health framework. Inadequate compaction, poor sealing or structural damage during storage can allow oxygen to enter the silo, resulting in aerobic spoilage and encouraging the growth of opportunistic pathogens like Listeria monocytogenes and mycotoxin-producing fungi.

Contaminated silage can expose livestock to clinical pathologies such as Listerial encephalitis and immunosuppressive mycotoxicosis. Feed contaminated with aflatoxin B1 may also contribute to aflatoxin M1 residues in milk, creating a direct link between feed quality and consumer safety.

The environmental consequences of poor silage management must also be considered. Nutrient-rich silage effluent, if improperly collected or disposed of, can contaminate surrounding soil and water, contribute to localised acidification and promote eutrophication in aquatic ecosystems.

Effective silage management therefore requires appropriate harvesting, adequate compaction, airtight sealing, regular inspection and hygienic feed-out practices. Proper effluent collection and disposal are equally important to prevent environmental contamination and protect animal, human and ecosystem health.

Zoonotic diseases and the animal–wildlife–environment interface

The interconnectedness of soil, water, livestock and human health is also evident in the transmission of zoonotic pathogens. Organisms such as Shiga toxin-producing Escherichia coli (STEC), Brucella abortus and Mycobacterium bovis can circulate within livestock systems and contaminate the surrounding environment. Human exposure may occur through contaminated food, unpasteurised dairy products, inadequately cooked meat or occupational contact with infected animals.

The World Health Organization estimates that contaminated food causes approximately 600 million illnesses worldwide each year, underscoring the importance of preventive measures across the food production chain. Strengthening hygiene, animal health monitoring, food processing standards and traceability can help reduce these risks.

Poultry production also requires sustained attention to biosecurity and emerging infectious diseases, including highly pathogenic avian influenza (HPAI) H5N1. Interactions among domestic poultry, wild birds and other wildlife can create opportunities for pathogen transmission across species and ecosystems. HPAI outbreaks can cause substantial mortality in wild bird populations and affect other susceptible wildlife, including some mammalian species. The potential for zoonotic transmission makes effective surveillance and

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prevention particularly important.

Changes in land use, habitat disruption and inadequate livestock waste management can alter wildlife movement and bring wild animals into closer contact with livestock and farm environments. Such interactions may increase opportunities for pathogen exchange in either direction. Deforestation and climate-related environmental changes can also alter the distribution of ticks and biting insects, potentially expanding the geographical range of vector-borne diseases such as Bovine Ephemeral Fever and Newcastle diseases.

These environmental changes can influence the wider disease landscape, although diseases such as Newcastle disease are primarily transmitted through infected birds, contaminated materials and other direct or indirect exposure routes rather than through insect vectors.

Addressing these overlapping threats requires coordinated biosecurity, molecular and epidemiological surveillance at the livestock–wildlife interface, appropriate farm hygiene and sustainable waste management. Timely detection and coordinated responses can help limit pathogen transmission and reduce risks across the human–animal–environment continuum.

A coordinated One Health approach for a safer food system

Soil health, animal nutrition and food safety form an interconnected biological continuum, demonstrating that the integrity of the human food supply is fundamentally linked to the condition of agricultural soils. Healthy, biologically active soils support nutrient uptake and crop productivity, while appropriate soil management can help reduce the availability and movement of certain contaminants.

Adopting a holistic One Health framework highlights the importance of biologically diverse, resilient soils in optimising the uptake of essential macro- and micronutrients by forage crops, thereby supporting livestock health and productivity. Healthy soils can also contribute to environmental protection by immobilising certain heavy metals, facilitating the degradation of specific chemical residues and supporting microbial processes that may suppress some soilborne pathogens. These benefits, however, depend on soil characteristics, the nature of the contaminants and the management practices employed.

For India, integrating soil health into One Health strategies offers an opportunity to strengthen agricultural sustainability while improving livestock productivity and protecting consumers. Key priorities include balanced nutrient management, regular soil testing, organic matter restoration, responsible antimicrobial use, feed quality monitoring, effective silage preservation, improved waste management and coordinated disease surveillance.

Transitioning from input-intensive practices towards regenerative and resource-efficient agricultural systems is therefore an important step towards restoring soil function, reducing contaminant transfer and minimising bioaccumulation risks across the food chain. Combined with rigorous feed hygiene, effective farm biosecurity and robust food safety systems, these practices can help sustain livestock welfare, strengthen climate resilience and safeguard long-term food security and public health.

Ultimately, a resilient food system depends on collaboration among farmers, feed manufacturers, veterinarians, researchers, policymakers and the wider livestock industry. By recognising the links between soil, crops, feed, animals, food and people, the One Health approach can support more sustainable agricultural practices, safer animal-derived foods and lasting protection of human and environmental health.



FeedTechnoVision 2026: Turning Variability into Performance Through Precision and Prevention

By **Think Grain Think Feed**

At Trouw Nutrition's two-day FeedTechnoVision Asia forum, experts from four continents highlighted the enormous growth opportunity for the animal protein industry—and the challenge standing in its way: variability in raw materials, climate and production performance. Their message to the feed community was clear: better measurement, precision formulation, proactive quality management and process control are essential to translating growth potential into consistent results.

International agri-food strategist Osler Desouzart opened FeedTechno Vision 2026 with The Next Ten Years, drawing on his experience in South America and Brazil's emergence as the world's largest poultry exporter to highlight Asia's immense animal protein potential. Describing the region as "two planets"—Planet China and Planet India—he noted that animal product consumption in Asia has grown by 253% since 1965, with rising incomes and low per-capita consumption offering significant headroom for growth.

Drawing lessons from Brazil's poultry industry, which exports to 176 countries and accounts for approximately a quarter of global poultry trade, Desouzart highlighted the importance of addressing raw-material variability, strengthening process consistency and embracing digitalisation. With feed accounting for 65–75% of live-bird production costs, he underlined that genetics provides the potential, but nutrition and health determine performance.

Looking ahead, he projected that broilers could reach market weight in just 30 days by 2035, potentially enabling one additional flock annually from existing housing infrastructure. Labour shortages will

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accelerate automation, while urban consumers increasingly demand convenient, portion-controlled and ready-to-cook products. Realising this potential, however, will require the industry to manage variability more effectively across the feed-to-food chain.

That challenge begins with understanding the raw materials entering the feed mill. Justyna Maczynska, based in Thailand highlighted the urgency of moving from reactive inspection to preventive quality management, particularly amid severe flooding in Bangkok and the threat of El Niño-related crop disruptions. "More variability, less time to react," she observed.

Emphasising that "animals don't grow on ingredient names," she explained that raw materials carrying the same name can differ significantly in nutritional value and risk profile. Consistent feed quality therefore requires more than incoming inspection: manufacturers must assess suppliers, monitor storage and transport conditions, and strengthen controls throughout production. The objective is to anticipate changes, act before they affect performance and make quality a shared responsibility across the organisation.

The impact of ingredient variability becomes particularly clear in nutritional formulation. Dr Roland Koedijk, Global Technical Manager Poultry at Trouw Nutrition, demonstrated how relatively small errors in nutrient assumptions can translate into measurable economic losses. A 1% lower protein level in soybean meal than assumed could cost around 3 cents USD per bird in lost performance, compared with approximately 1 cent per bird to correct the formulation. Errors in digestibility values could cost around 5 cents per bird.

He also cited trials in which diets with identical nutrient specifications but different protein digestion rates resulted in a 120–140 g difference in body weight per broiler. He urged nutritionists to use regional nutrient tables, accurate ingredient values and age-specific digestibility data to formulate for target performance. The underlying principle is to formulate for the nutrients the animal can utilise, rather than relying solely on standard ingredient specifications.

Weather-related variability also raises concerns about mycotoxin contamination. Dr Swamy Haladi highlighted the potential for heightened mycotoxin challenges in India during 2026–27, as uneven rainfall and late-season rain can influence crop contamination. Fumonisins are emerging as a particular concern, while India continues to experience higher and more variable aflatoxin levels than the Asian average.

Citing illustrative broiler performance impacts of around 200 g lower body weight and a 12-point deterioration in feed conversion, he stressed the importance of multi-toxin testing using LC-MS/MS, rather than testing for individual toxins in isolation. Feed manufacturers need to strengthen surveillance, interpret results in the context of ingredient origin and animal species, and intervene before contamination translates into production losses. The emphasis is shifting from detecting a problem after it occurs to anticipating risks and responding early.

Beyond ingredient quality and formulation, processing conditions play a decisive role in determining the consistency and safety of finished feed. Dr Dejan Miladinovic, Head of the Centre for Feed Technology at the Norwegian University of Life Sciences (NMBU), emphasised that moisture and steam management must be optimised as part of an integrated processing system, rather than through isolated machine adjustments.

Different ingredients absorb



moisture at different rates, making a uniform conditioning recipe less effective across formulations.

While conventional pelleting gelatinises approximately 10–20% of starch, extrusion at 35–40% moisture enables more extensive cooking, particularly important for aquatic feeds that may need to remain stable in water for up to two hours. Insufficient moisture can increase friction, energy consumption and equipment wear, whereas excess moisture can compromise pellet quality and increase the risk of mould growth and microbial contamination.

His recommendations included using saturated steam, verifying mixer uniformity at least twice a year and maintaining conditioning at 81°C for a minimum of 30 seconds. He also emphasised the need to monitor fines, as excessive breakage can mean losing valuable ingredients and undermining mill profitability. Effective processing, he emphasised, depends on balancing moisture, temperature, equipment performance and final pellet quality.

The connection between processing and feed safety was further emphasized by microbiologist Dr Jean-Michel Nebout of Laboratoire d'Analyses Microbiologiques, France. Nebout, highlighted Salmonella Infantis as an emerging concern due to its multidrug resistance and ability to withstand certain sanitizers. Dutch data cited in his presentation showed prevalence rising from 2–3% at grandparent level to 60–70% at slaughter, illustrating how contamination can accumulate along the production chain.

He identified cleaning and sanitation, feed delivery trucks, feed form and dead-bird handling as four key farm-level factors, accounting for 90–95% of positive flocks in a cited study. At feed mills, contaminated raw materials are a major entry route, while condensation in coolers can encourage bacterial multiplication.

Nebout recommended monitoring temperature, humidity and dew point, insulating coolers to eliminate cold spots, and ensuring hygienic equipment design. He stressed that finished-feed testing alone cannot guarantee safety; continuous process monitoring and contamination prevention are essential. Prevention requires identifying contamination routes and continuously monitoring process conditions before risks spread through the feed-to-food chain.

Moisture measurement is another important part of this preventive approach. Moisture loss from mixing to finished feed can reach around 1.5%, depending on incoming moisture, storage duration, grinding temperature and cooling conditions. With ambient humidity across South Asia varying significantly between seasons, feed mills need moisture-management strategies suited to local conditions. In-line sensors can help larger facilities regulate water addition, while smaller mills require cost-effective alternatives.

Dr Eugenio Alcalde cautioned that near-infrared spectroscopy (NIR) readings can differ

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from laboratory results by ±2%. Regular calibration against reference laboratory analysis, supported by oven methods or dedicated moisture analysers, is therefore essential. The broader lesson is that digital measurements are valuable only when their accuracy is established and maintained.

Digitalisation and Collaboration: From Insight to Impact

Digital tools and artificial intelligence are creating new opportunities to improve decision-making across the feed-to-food chain. Applications discussed included nutritional models that account for ingredient variability, models estimating genetic potential under different production conditions, supply-and-demand analysis and regional mycotoxin monitoring. These tools can help manufacturers assess changing risks and adjust formulations before variability affects animal performance.

However, technology alone cannot deliver consistent results. Reliable data, skilled professionals and clear action plans are needed to turn digital insights into improvements in formulation accuracy, process control and production efficiency.

Lessons from across Asia reinforced the importance of adapting technology and business strategies to local market conditions. Thailand's shift towards cooked poultry exports, Korea's global positioning of Korean fried chicken and China's technology-driven livestock sector demonstrate different ways of building competitive advantages. For India, its market scale, technical talent and digital capabilities offer opportunities to accelerate progress.

Collaboration across the value chain—including feed manufacturers, ingredient suppliers, academia, regulators and even competitors—was another recurring theme. Sharing knowledge, benchmarking performance and addressing common challenges can help the industry improve efficiency while strengthening biosecurity and feed safety.

Closing the discussions, speakers reinforced that the industry's next phase will depend on translating scientific knowledge and digital capabilities into consistent operational results. Eduardo Alberto, CEO of Trouw Nutrition, captured the central theme: "Growth creates opportunity, science creates possibilities, consistency creates leadership."

Pedro Caramona, Strategy Director – Feed to Food Safety at Trouw Nutrition, similarly emphasised the opportunity to reduce variability and improve predictability in feed production across Asia. By combining human expertise, precise data, stronger processes and collaborative teams, the feed community can translate nutritional potential into more predictable animal performance.

The organisers announced plans to return to Latin America in 2027 for the fifth edition of FeedTechnoVision.



CLFMA of India Elects Sumit Sureka as Chairman for 2026–2028

CLFMA of India, the apex association representing the livestock feed and allied sectors, has elected Sumit Sureka, Managing Director of Shivshakti Agro India Pvt. Ltd. and Amrit Breeder Farms Pvt. Ltd., and Director of Impressico Business Solutions Pvt. Ltd., as its Chairman for the 2026–2028 term.

With over 30 years of experience in the animal feed and poultry industries, Sureka brings expertise across poultry, dairy, aquaculture and piggery feed, poultry breeding, hatcheries and broiler integration. He has been associated with CLFMA for over 25 years through Shivshakti Agro, serving as a Managing Committee Member for around 10 years, an office-bearer for over eight years and Deputy Chairman for six years. He is also Vice President of the West Bengal Poultry Federation and an alumnus of London Business School and Shri Ram College of Commerce, Delhi.

Maize and soybean availability emerge as key priorities

Highlighting the industry's immediate challenges, Sureka identified the availability and affordability of maize and soybean as major priorities, given their importance to poultry, dairy and aquaculture feed production. He emphasised the need for long-term solutions through collective industry efforts, improved productivity, stronger supply-chain infrastructure and constructive government engagement to ensure competitive raw material prices.

Other priorities for the 2026–2028 term include promoting predictive technologies and knowledge-sharing to improve productivity, expanding CLFMA's membership across regions and industry segments, and creating awareness of career and entrepreneurship opportunities in the animal food industry among students in higher educational institutions.

The Association also plans to establish a dedicated team to develop Vision 2040 – 'Most Economic Protein' for the animal food sector.

Commenting on his appointment, Sureka said the livestock and feed sectors play a vital role in India's nutritional security, farmers' livelihoods and economic development. He stressed that addressing feed raw material availability, input cost volatility, animal nutrition and production efficiency requires sustained collaboration between industry stakeholders and policymakers.

CLFMA also acknowledged the contribution of Immediate Past Chairman Divya Kumar Gulati in strengthening the Association's industry representation, policy advocacy and stakeholder engagement.

Supported by a team of office-bearers representing different industry segments, the new leadership will focus on strengthening coordination across the animal agriculture value chain and advocating policies that promote quality feed availability, balanced animal nutrition and sustainable industry growth.

India Mandates BIS Certification for Three Animal Feed Products

India has introduced mandatory Bureau of Indian Standards (BIS) certification for three specified animal feed products under the Animal Feeds and Feed Ingredients (Quality Control) Order, 2026. Issued by the Department of Animal Husbandry and Dairying through notification S.O. 5576(E) on October 7, the order was published in the Gazette of India on October 12, 2026.

The order requires the specified products to conform to applicable Indian Standards and carry the BIS Standard Mark under a valid licence issued in accordance with Scheme-I of the BIS (Conformity Assessment) Regulations, 2018.

The products covered are:

- Mineral mixtures for supplementing cattle feeds: IS 1664.
- Dicalcium phosphate, animal feed grade: IS 5470.
- Common salt and cattle licks for animal consumption: IS 920.

Phased Implementation

For mineral mixtures (IS 1664), compliance is mandatory from April 1, 2027, for general enterprises, July 1, 2027, for small enterprises and October 1, 2027, for micro enterprises.

The notification's implementation-date columns for dicalcium phosphate and common salt/cattle licks are blank. Manufacturers should therefore refer to the Gazette and subsequent official clarifications for the applicable timelines rather than assume that the above dates automatically apply to all three categories.

Goods intended for export are exempt. BIS has been designated as the certification and enforcement authority, with violations attracting penalties under the BIS Act, 2016. The latest applicable versions of the specified Indian Standards, including notified amendments, will govern compliance.

The order introduces a mandatory quality-control framework for these products, requiring manufacturers to review their product specifications, testing procedures and certification arrangements.

India Targets 30 Million Tonnes of Fish Production in Five Years

India is developing a National Plan of Action (NPOA) for small-scale inland fisheries, aiming to increase annual fish

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production to 30 million tonnes over the next five years and raise seafood exports to ₹1.25 lakh crore.

Union Fisheries Secretary Dr Abhilaksh Likhi announced the development phase of the plan, which is being prepared under the framework of the UN Food and Agriculture Organization (FAO), in collaboration with the Department of Fisheries and the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO).

India currently produces around 19.7 million tonnes of fish annually, with inland fisheries contributing nearly three-fourths of the total. Seafood exports have crossed ₹70,000 crore, according to the official release.

The proposed plan seeks to strengthen livelihoods, improve value chains and promote sustainable management of freshwater resources. It will cover rivers, canals, reservoirs, lakes, floodplain wetlands, tanks and cold-water fisheries.

Key focus areas include fishing rights, resource management, employment, gender equality, post-harvest trade, disaster preparedness and climate resilience. Likhi also highlighted climate change and deteriorating water quality, including declining dissolved oxygen levels, as growing challenges for inland fisheries.

He stressed that the plan must translate into practical benefits for fishing communities through coordinated, mission-mode outreach and region-specific interventions.

According to BOBP-IGO Director Dr P. Krishnan, the plan will be finalised after stakeholder consultations before its public launch and subsequent implementation.

The initiative aims to balance production and export growth with sustainable resource use and improved incomes for small-scale fishing communities.

Millet Market Firms as Indian Poultry Feed Demand Supports Bajra

Indian bajra prices have strengthened modestly, with gains of around ₹25 per quintal reported in selected mandis, supported by increased procurement from poultry feed manufacturers. Buyers are replenishing inventories to meet processing requirements, while sellers are maintaining firm offers amid steady demand.

The rising cost of maize and other feed ingredients has renewed interest in bajra as an alternative energy source in poultry rations. Its price competitiveness is encouraging feed manufacturers to diversify raw-material sourcing, although inclusion levels depend on nutritional requirements and formulation economics.

International Market Trends

International millet quotations from Ukraine and China remain largely stable to slightly higher. In Ukraine, yellow hulled millet seed quotations at Odesa (FOB) increased from €0.307 to €0.318, while other conventional and organic grades remained largely unchanged. In China, organic yellow millet kernels (FOB Beijing) were quoted at €0.96, while conventional kernels stood at €0.88, indicating a mildly firm market.

Supply and Demand

Domestic bajra arrivals remain normal for the season, but stronger procurement from poultry feed manufacturers is helping absorb available supplies. Elevated prices of maize and oilseed meals, alongside concerns over feed availability, are encouraging greater consideration of alternative grains. Globally, supplies from Black Sea origins and China remain accessible, limiting the possibility of a sharp price escalation.

Market Fundamentals and Outlook

The current firmness in Indian bajra is primarily demand-driven rather than a result of acute supply shortages. Weather-related uncertainties and uneven monsoon conditions in some parts of India remain factors to watch, although available supplies are currently adequate to meet nearby requirements.

In the short term, the domestic market is expected to remain cautiously firm, supported by poultry feed demand and steady seller offers. However, increased arrivals from the new crop could limit further gains. International quotations are likely to remain broadly stable, with a slightly positive undertone.

Feed manufacturers may consider staggered procurement while comparing bajra's landed cost and nutritional value against maize and other energy ingredients.

Source: CMB News

India's Soybean Output Set to Decline Despite Higher Sowing Amid Dry Spells

India's soybean production is projected to decline by 2.1% to 107.93 lakh tonnes in the 2026 kharif season, despite a nearly 5% increase in sown area, according to the Soybean Processors Association of India (SOPA). Prolonged dry spells and inadequate soil moisture in key producing states have affected crop yields.

SOPA's first production estimate compares with 110.26 lakh tonnes in the previous season. Soybean acreage increased from 112.14 lakh hectares in 2025 to 117.73 lakh hectares in 2026. However, crop damage reduced the estimated harvested area to 109.98 lakh hectares, highlighting the impact of adverse weather conditions.

Regional Production Trends

Maharashtra is expected to record a 33.2% decline in production to 34.88 lakh tonnes, compared with 52.23 lakh tonnes last year. Karnataka and Telangana are also projected to see substantial declines of 43.6% and 46.1%, respectively.

In contrast, Madhya Pradesh, India's largest soybean-producing state, is expected to increase output by 32.2% to 57.16 lakh tonnes. Rajasthan's production is projected to rise by 48.2% to 9.47 lakh tonnes, partially offsetting losses elsewhere.

Drought Concerns

Dry conditions and inadequate soil moisture during critical crop-growth stages have contributed to production losses, particularly in Maharashtra, Karnataka and Telangana. Maharashtra reported 305 drought-affected talukas in October, while Karnataka also expanded its drought-affected areas through successive government notifications.

The lower production estimate could influence domestic soybean and soybean meal availability, with implications for poultry and livestock feed manufacturers. However, the final impact will depend on actual harvest outcomes, processing demand and market arrivals.

Maize-Based Ethanol Price Cut May Ease Feedstock Market Distortions

The government's decision to reduce the procurement price of maize-based ethanol by ₹3 per litre for the 2026–27 Ethanol Supply Year (ESY) has drawn mixed reactions from the grain-based distillery and sugar industries. While grain-based ethanol manufacturers have expressed concern over lower incentives, the sugar industry has broadly welcomed the move.

This marks the first reduction in maize-based ethanol procurement prices since the introduction of the ethanol blending programme. Meanwhile, procurement prices for ethanol produced from C-Heavy Molasses (CHM) and damaged foodgrains, including broken rice, have been retained at ₹57.97 and ₹64 per litre, respectively. The price of FCI-supplied rice has been increased by ₹1.82 per litre.

The revised pricing comes amid concerns over the growing competition between ethanol manufacturers and the animal feed industry for maize supplies. Higher demand from grain-based distilleries has contributed to pressure on maize availability and prices, affecting poultry and livestock feed manufacturers.

Grain Ethanol Manufacturers Association (GEMA) President CK Jain argued that reducing maize-based ethanol incentives while maintaining comparatively attractive rice-based supplies could weaken investment in maize-based production and demand for farmers' produce. He called for coordinated pricing and allocation policies to ensure viability across feedstocks.

Meanwhile, the Indian Sugar & Bio-Energy Manufacturers Association (ISMA) supported restrictions on ethanol production from sugarcane juice and B-Heavy Molasses, emphasising the need to prioritise domestic sugar availability. ISMA also raised concerns over preferential procurement allocations for dedicated ethanol plants, arguing that these could limit sugar mills' access to the ethanol market and affect their ability to pay farmers.

The pricing revision could influence maize procurement patterns and competition between industrial and feed-sector consumers. Its impact on maize availability and prices will depend on ethanol demand, feedstock allocation and procurement policies during 2026–27.

Drought-hit Latur Farmers Cut Standing Sugarcane to Feed Livestock

Farmers in drought-hit Latur district of Maharashtra are cutting standing sugarcane crops to feed their livestock as poor rainfall and depleted fodder reserves intensify the shortage of animal feed. The move is forcing farmers to sacrifice potential crop earnings to protect their cattle.

With grazing lands drying up and green fodder becoming scarce, farmers are turning to standing sugarcane as an emergency feed source. The crisis has also affected milk production, adding pressure to already strained farm incomes.

Narayan Gude, a farmer from Kavha village who owns seven buffaloes, two cows and several calves, said his herd's daily milk output had fallen to just 10–12 litres. He requires nearly half a tonne of sugarcane each day to feed the animals. His soybean crop has also suffered extensive damage, with yields expected to fall below half a quintal per acre. He is now feeding chopped sugarcane mixed with soybean residue to his livestock.

The Maharashtra government declared drought in 265 of the state's 358 talukas in September 2026 and announced relief measures, including crop-loan restructuring, land-revenue concessions and power-bill subsidies.

The fodder crisis has prompted farmers to seek government intervention, including the establishment of fodder camps. For livestock-dependent households in Marathwada, declining milk yields and the diversion of standing crops into feed are creating losses on both the crop and dairy fronts.

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