PAGES 32 www.expressnutra.in

EXPRESS NUTRA

ELEVATING THE BUSINESS OF NUTRACEUTICALS FEBRUARY-MARCH 2026, ₹ 50

Enabling a Healthier World

Lonza
Capsules & Health Ingredients

Quality isn't assumed. **It's certified.**

UC-II® Undenatured Type II Collagen is now NutraStrong™ Collagen Verified

Analytical compliance | Regulatory compliance | Manufacturing compliance

UC-II | NUTRA STRONG Collagen Verified

PAGES 32

www.expressnutra.in

PRESENTING PUBLICATION
EXPRESS PHARMA

EXPRESS NUTRA

ELEVATING THE BUSINESS OF NUTRACEUTICALS

FEBRUARY-MARCH 2026, ₹50

+ Interview

Chandra Shekhar Batra
Co-founder, OneVeda

FROM FARM TO FORMULA
THE GREEN SHIFT IN NUTRA SUPPLY CHAINS

From botanicals to marine extracts, nutraceutical ingredients depend heavily on natural resources. Experts share how the industry can adopt more sustainable and ethical practices.

SPRAYCEL® COATINGS

"Excellent Quality Consistency with
Time and Cost Savings"

- Express Film Coating
- Fast Sugar Film Coating
- Tio2 Free Coating
- Moisture Barrier
- Special Sweet Coating
- Flavoured Film Coating
- Pearl Coating
- Enteric Coating
- Precoat
- Seal Coating

ANAND ENTERPRISE

A/18, 3rd Floor, Narayan Chambers, B/h. Chinubhai Centre, Ashram Road,
Ahmedabad - 380009, Gujarat, INDIA. Telefax : +91 - 079 - 26582705 / 26577465

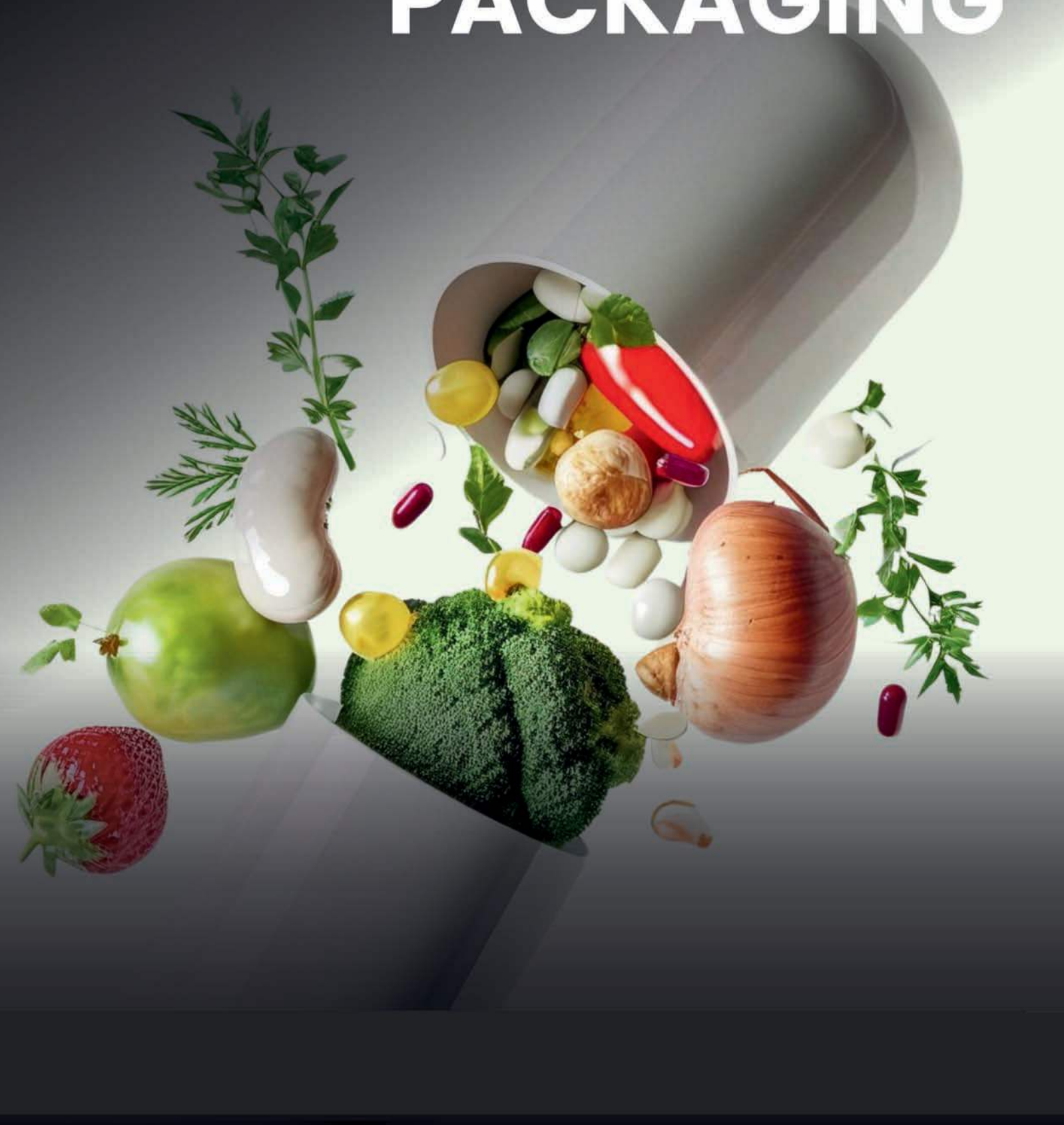
E-mail : anandenterprise2000@yahoo.com

www.spraycel.com

CILICANT
ACTIVE PACKAGING®

Deliver a Superior Consumer Experience with

CILICANT'S **ACTIVE PACKAGING**



CONTENTS

EXPRESS NUTRA
ELEVATING THE BUSINESS OF NUTRACEUTICALS

Chairman of the Board
Viveck Goenka

Sr. Vice President-BPD
Neil Viegas

Vice President-BPD
Harit Mohanty

Editor
Viveka Roychowdhury*

Editorial Team
Lakshmipriya Nair
Kalyani Sharma
Neha Aathavale
Swati Rana

DESIGN
Art Director
Pravin Temble

Chief Designer
Rekha Bisht

Senior Artist
Rakesh Sharma

Marketing Team
Rajesh Bhatkal
Ashish Rampure

Production Co-ordinator
Dhananjay Nidre

Scheduling & Coordination
Pushkar Waralikar

CIRCULATION
Mohan Varadkar

From farm to formula: The green shift in nutra supply chains

From botanicals to marine extracts, nutraceutical ingredients depend heavily on natural resources. Experts share how the industry can adopt more sustainable and ethical practices

SANJAYA MARIWALA
Executive Chairman and MD, OmniActive Health Technologies

MIHIR KARKARE
Co-founder and CEO, Meru Activs

DR. R. GOVINDARAJAN
Chief Innovation Officer, Kapiva

SHANKARANARAYANAN JEYAKODI
Co-Founder & Managing Director, ZeusHygia LifeSciences

SANDEEP GUPTA
Chief Founder & Director, Expert Nutraceutical Advocacy Council (ENAC)

AKSHITA SINGLA
Co Founder, Akya Wellness

CONTENTS

Pharma, FMCG majors look for a nutra fix

India's nutraceuticals sector seems set for more deals as more nutra start ups come of age

VIVEKA ROYCHOWDHURY
Editor
viveka.r@expressindia.com
viveka.roy3@gmail.com

We mark *Express Nutra*'s first anniversary with promising deal activity in the nutraceutical sector. As expected, the deals continue the trend of pharma companies morphing from curative to a broader preventive, holistic health model and FMCG companies adding health & wellness to their portfolios. In the pharma sector, the looming loss of exclusivity (LoE) of glucagon-like peptide 1 receptor agonists (GLP-1s) could also provide another spur to M&A and rising investor interest in select nutra companies.

For instance, USV's recent agreement to acquire 79 per cent equity stake in Nutritionalab, the parent company of Wellbeing Nutrition, is billed as the former's 'strategic expansion into India's fast-growing nutra and consumer wellness space.'

The agreement announced in February reportedly values the D2C company, which was founded in 2019, at Rs 1583 crores. As per the release, it clocked 120 per cent growth in the last two years and is poised to cross Rs 450 crores in revenue by FY27. USV is already a market leader in the oral anti-diabetic and cardiovascular segments and like most of its peers, is launching a GLP-1 therapy post LoE. The use of GLP-1 therapies to treat obesity and diabetes has to be combined with specialised nutrition guidance and hence it makes sense to acquire known nutra brands.

Another recent example of a pharma-nutra deal is Cipla's acquisition of Inzpera last November. Inzpera reportedly makes nutritional supplements spanning immune, respiratory, and gut health. There are obvious synergies with Cipla's focus on respiratory, cardiovascular and other segments.

Pharma companies could be competing with FMCG companies for similar targets in the nutra space. But for now, equity investments by FMCG majors could be an early marker of intent and quality.

For instance, Nutritionalab/Wellbeing Nutrition was one of FMCG major Hindustan Unilever's first forays into the health & wellbeing segment way back in December 2022. In the same month, Hindustan Unilever also bought a majority 51 per cent in Zywie Ventures (OZiva).

Three years later, Hindustan Unilever sold its 19.8 per cent stakes in Wellbeing Nutrition to USV for Rs 307 crores while acquiring the remaining 49 per cent stake in OZiva for Rs 824 crores. In the same month, Marico announced an agreement to acquire a 60 per cent stake in Cosmix Wellness, a digital-first functional wellness brand, at an equity valuation of Rs 375 crore.

India's nutra sector seems set for more deals as nutra start ups come of age and look for an exit or for partners to scale up. According to a Tracxn report, updated as of March 16, 2026, the nutra tech sector in India comprises 656 companies, including 109 funded companies having collectively raised $622 million in venture capital money and private equity. Out of these, 27 are Series A+ funded.

The sector in India has seen 11 acquisitions and one IPO since Tracxn started tracking the sector in 2016-17. Tracxn's nutra tech report includes companies manufacturing and marketing nutra ingredients/raw materials, functional foods, functional beverages and dietary supplements.

As we start our second year, *Express Nutra* promises to highlight key trends in the sector. This edition presents a gamut of views on sustainable sourcing strategies. We welcome feedback, so look forward to suggestions on how we can support the nutra sector to move to the next level.

Experience the Vantage advantage.

In a crowded nutra space, it takes true innovation to stand out. Stay one step ahead of your competitors with our market-leading nutrient delivery solutions. Designed to maximise your products' benefits to consumers, our beadlets and liquid-filled hard capsules provide multiple release profiles timed to ensure optimum bioavailability.

VANTAGE NUTRITION
An ACG Group Company

www.vantage-nutrition.com

The industry is moving from fast selling to long-term trust building

Chandra Shekhar Batra, Co-founder, OneVeda, in an interview with **Kalyani Sharma,** discusses the structural shifts shaping India's fast-evolving nutraceutical industry

India's nutraceutical sector is projected for significant growth. What structural shifts are shaping the industry's next phase of expansion?

What's happening in India's nutraceutical space right now feels very similar to what happened in food and pharma a decade ago; the market is moving from excitement to responsibility. Earlier, the focus was on launching quickly, riding trends, and making bold promises. Today, that approach simply doesn't last.

Consumers are reading labels, asking doctors, comparing brands, and questioning claims. That behavioural shift alone is forcing the industry to grow up. The regulatory clarity is improving, which is pushing companies to take research, safety and documentation more seriously.

Manufacturing is becoming more disciplined with a stronger emphasis on quality control, ingredient traceability and consistency. The brands that once relied purely on marketing are now investing more in formulation science and long-term product credibility for consumer trust.

Another major shift can be seen in the distribution. Wellness today is no longer just about the shelves in medical stores. Digital platforms, community-driven learning, consultations and direct relationships with customers are shaping buying decisions. People don't just want supplements — they want understanding.

The next phase of growth won't belong to the loudest brands. It will belong to those who combine science, transparency, and patience. The industry is moving from fast selling to long-term trust building.

How can Ayurveda evolve into a globally competitive, evidence-backed wellness system while maintaining its traditional integrity?

Ayurveda already has something modern healthcare is still chasing, a deep focus on prevention, balance and long-term wellbeing. Its problem has never been effectiveness. Its challenge has been presentation, validation and consistency.

For Ayurveda to succeed globally, it doesn't need to abandon tradition. It needs to strengthen it with modern systems through proper research studies, standardised ingredient sourcing, dosage consistency, and safety testing. When traditional formulations are supported by clinical evidence and quality benchmarks, they become easier for regulators and consumers worldwide to trust.

At the same time, it is critical that in the race to modernize Ayurveda, we do not dilute its core philosophy. Ayurveda was never designed to function like a quick pharmaceutical fix. Its strength lies in synergistic herb formulations, supportive daily routines, and a systems-led approach that addresses root causes rather than isolated symptoms. Its efficacy comes from how ingredients work together and how wellness is built progressively over the time.

Equally important is industry-led education. Today's consumers seek more transparency, standardisation, and scientific validation, not just the traditional claims. Thus, when people understand the mechanism, sourcing standards, and formulation logic behind a product, its credibility strengthens naturally. By preserving Ayurvedic authenticity while integrating clinical research, quality benchmarks, and modern nutritional

ROMACO NOACK
beyond technology

Romaco Noack N 950E Blister Machine

Perfect choice for high-speed blister packaging

- German engineering
- Local format part production
- Compatible with all sustainable blister materials
- Demo machine available for trials in India

... contact us for all details

ROMACO

Sustainability Enabler

www.romaco.com

science, Ayurveda can confidently stand alongside global wellness systems — authentic, evidence-aligned, and highly relevant for the future.

With the rise of personalised nutrition, what role will technology and partnerships play in scaling customised solutions responsibly?

Personalised nutrition is arguably one of the most transformative shifts in the wellness industry, but it must be scaled with scientific and ethical responsibility. Technology today enables deeper insights into dietary gaps, biomarkers, lifestyle stressors and consumption patterns — allowing the industry to move beyond mass-market supplementation toward precision-led, outcome-driven solutions.

However, personalisation cannot be driven by algorithms alone. Strategic partnerships with clinicians, nutritionists, diagnostic laboratories, and research institutions are essential to ensure that the recommendations are evidence-backed and contextually relevant. Without clinical validation and regulatory alignment, personalisation risks becoming a marketing narrative rather than a healthcare solution.

Equally critical is data governance. As consumers share increasingly sensitive health information, brands must prioritise transparency, ethical data usage, and robust privacy frameworks. Trust will be the real currency in this category.

When technology augments human expertise instead of replacing it, personalised nutrition becomes preventive rather than reactive. The future of wellness will not be one-size-fits-all but it must remain credible, compliant and guided by science at every stage.

With increasing scrutiny on nutraceutical claims and quality standards, what collaborative steps are needed across the sector?

With the rising scrutiny around nutraceutical claims and product quality, the industry is at an inflection point where collective responsibility must take precedence over the fragmented growth. For the sector to mature sustainably, collaboration between manufacturers, regulators, researchers, and industry associations is very essential. This is no longer about rapid product proliferation; it is about building a scientifically credible, globally competitive ecosystem that can withstand regulatory evaluation and informed consumer questioning.

The next phase of growth won't belong to the loudest brands. It will belong to those who combine science, transparency, and patience. The industry is moving from fast selling to long-term trust building

Regulators, on their part, can accelerate responsible growth by establishing clear, consistent, and globally aligned frameworks.

Research institutions and academia must also play a stronger collaborative role by doing structural partnerships to study traditional botanicals, bioavailability, and long-term efficacy can create a shared scientific repository that benefits the entire ecosystem, not just individual brands.

When manufacturing discipline, regulatory clarity, and scientific research converge, nutraceuticals transition from discretionary wellness products to credible preventive health solutions attracting global partnerships, institutional capital, and sustained consumer confidence.

How does OneVeda ensure its formulations align with both traditional principles and modern science?

At OneVeda the formulation development begins with classical Ayurvedic principles like studying traditional texts, understanding ingredient synergy, and respecting the concept of balance rather than isolated symptom targeting. Ayurveda was designed as a systems-based science, where herbs work in combination to restore equilibrium over time. We retain that foundational logic while identifying health concerns that are highly relevant in today's lifestyle-driven wellness landscape.

Once a formulation is rooted in tradition, we apply modern scientific processes — quality testing, sourcing consistency, safety validation and manufacturing discipline. Every ingredient is carefully selected, tested and documented to meet today's health standards.

Responsible positioning is equally important. We consciously avoid exaggerated claims and instead we focus on preventive health, gradual efficacy, and informed usage. By reinforcing Ayurvedic authenticity with research-backed validation and quality discipline, we aim to create formulations that are both culturally rooted as well as globally credible, where tradition and science strengthen, rather than contradicting each other.

How are you shaping OneVeda's long-term strategy for credibility and sustainable growth?

In wellness sector, growth without trust never lasts. So, OneVeda's long-term strategy is prioritise quality over speed by strengthening institutional trust before accelerating expansion. This means investing consistently in research-backed formulations, robust quality systems, and transparent communication frameworks rather than chasing rapid portfolio proliferation. We believe sustainable brands in nutraceuticals are built on scientific depth, not speed to shelf.

From a product standpoint, we prioritise disciplined innovation cycles — validated sourcing, standardized ingredients, third-party testing, and compliance-aligned claims. Education is a strategic lever for us, not just a marketing activity. An informed consumer base drives repeat adoption, reduces misinformation, and builds long-term category credibility.

The vision is not just to sell supplements, but to create a wellness ecosystem centred on preventive health, trust and consistency. Sustainable growth in this industry comes from patience, integrity and real value and that's the foundation we continue to build.' Reframe this answer more industry-insightful and impactful on behalf of the co-founder of OneVeda.

Kalyani.sharma@expressindia.com
journokalyani@gmail.com

SIGACHI
Experience Excellence..

Experience Unparalleled Formulation Advantages with

PRE-FORMULATED EXCIPIENTS

Ask for BARETab® Samples Today!

BARETab® is available in

BARETab® PH
A Novel Ready-Mix for Continuous Tablet Manufacturing

BARETab® Nutra
Ready Mix for any Nutraceutical Formulations

BARETab® ODT
For Oral Disintegration Tablets

Registered Office: 229/1 & 90, 2nd Floor, Kalyans Tulsiram Chambers, Madinaguda, Hyderabad, Telangana-500049. 040 4011 4874

www.sigachi.com customercare@sigachi.com

FROM FARM TO FORMULA
THE GREEN SHIFT IN NUTRA SUPPLY CHAINS

From botanicals to marine extracts, nutraceutical ingredients depend heavily on natural resources. Experts share how the industry can adopt more sustainable and ethical practices

Sustainable sourcing for nutraceuticals: Creating enduring systems

The surge in consumer demand for natural ingredients is rooted in rising lifestyle-related diseases. Meanwhile, farmers face dwindling water, depleted soil, and unpredictable weather. These realities influence planting, yields, and threaten the consistent supply of ingredients.

For companies like ours, sustainability means protecting farmland. If land degrades or water access falters, no innovation can compensate.

The key question is whether our sourcing can endure the next decade.

If one views the situation in a broader manner, agriculture often sits at the center of the climate change conversation. The Food and Agriculture Organisation of the United Nations has reiterated its concerns over how food systems impact one-third of global greenhouse gas emissions. This is important for a nutraceutical business because we source our ingredients and use the same land and water sources that support agriculture. This can become a conflicting scenario if it is not designed properly.

For us, sustainable sourcing begins with this simple, practical question: How can we continue to grow without consuming more land and water than necessary, and how can we make sure that farmers are better off because of our growth?

Top ideas for sustainable sourcing: An industry perspective

Climate change has become a significant factor in botanical sourcing. Droughts, climatic instability, and rising agricultural emissions are realities in major sourcing areas. For nutra manufacturers, this calls for a reevaluation of how plants could be grown. Other models for growing plants, such as controlled environment agriculture, could protect climate-vulnerable plants such as marigold or paprika from climatic change. At the same time, new innovations in non-GMO seeds could provide a solution to boost production without needing to use more agricultural land. When combined with other methods such as crop rotation or integrated pest management, these methods could protect the environment as well as the natural integrity of botanicals used in nutraceuticals.

SANJAYA MARIWALA
Executive Chairman and MD,
OmniActive Health Technologies

OmniActive's sustainable sourcing model: Implementation and impact

At OmniActive, we don't look at sustainability as a checklist item. It is how the company has grown. We work directly with more than 10,000 farmers across India and are involved in farming on over 20,000 acres.

Seeds are where everything begins. If the seed isn't right, nothing else matters. That's why hybrid seeds are central to achieving reliable yields and consistent quality in marigold cultivation. By maintaining close oversight from seed procurement through on-ground cultivation, we ensure uniform performance, reduced variability, and dependable outcomes.

Responsible sourcing, for us, doesn't stop at farming. We reuse spent marigold material instead of dumping it. We think about recyclability when designing packaging. We try to use equipment for multiple purposes rather than buying new machines for everything

Water is one of the biggest challenges farmers deal with, and it's getting tougher every year. We work with farmers to install drip irrigation systems, and the difference is huge. Water use drops by as much as 90 per cent compared to flood irrigation.

Even in processing, we try to keep things practical. Marigold flowers carry a lot of moisture, which makes drying expensive and energy-draining. By adding a silage step before dehydration, we're able to remove about 30 per cent of the moisture early. The water we extract goes back to farmers as a natural fertiliser.

We've made similar choices around energy. At our Hassan plant, we use farm waste like rice husks, coffee residue, wood pellets, and sawdust instead of fossil fuels wherever possible. We switched to LED lighting and cut energy use for lighting by almost 90 per cent. Solar power now meets a meaningful part of our electricity needs.

What really keeps this model together is our relationship with farmers. Our teams spend a lot of time in the field—talking about pest issues, soil health, crop rotation, and everyday problems. Buy-back arrangements give farmers some protection from market swings, which makes it easier for them to adopt better practices instead of just chasing short-term returns.

Responsible sourcing, for us, doesn't stop at farming. We reuse spent marigold material instead of dumping it. We think about recyclability when designing packaging. We try to use equipment for multiple purposes rather than buying new machines for everything. We're also RSPO certified, which means the palm-based ingredients we use meet sustainability standards.

At the same time, sustainability means nothing if the science doesn't hold up. That's why our ingredients go through clinical validation—starting with pilot studies in India and then larger studies in the US. For us, doing the right thing environmentally has to go hand in hand with delivering credible results.

From extraction to cultivation: The next shift in nutra sourcing

The nutraceutical industry cannot keep calling itself health-focused while relying on sourcing models that degrade the very ecosystems human health depends on. If an ingredient comes from a fragile marine or botanical ecosystem, sustainability cannot be treated as a marketing claim added later. It has to be a design principle from day one.

This is especially important in omega-3. Antarctic krill is not just another raw material; it is a foundational species in the Southern Ocean food web, feeding whales, penguins, seals, and other marine life. In 2025, the krill fishery hit its catch limit early enough to trigger an unprecedented early closure, and research has also linked lower krill availability with lower humpback whale pregnancy rates. That should be a warning to the entire industry: if demand growth depends on extracting more from ecologically sensitive wild populations, then that model is not future-ready.

MIHIR KARKARE
Co-founder and CEO, Meru Activs

The real question companies should ask is not, *'Can we keep sourcing this ingredient?'* but, *'Should this ingredient be coming from a wild source at all?'* In many categories, the better answer now exists. Advances in cultivation and lipid science mean companies no longer have to depend on ocean harvesting when more responsible alternatives are available.

That thinking shaped our decision at Meru Activs. For our omega-3 formulation, we chose VAV Life Sciences' LECIVA®-M'Vegal DHA, a blend of DHA with sunflower phospholipids. The DHA is derived from cultivated microalgae, which means we go directly to the original source of marine omega-3 instead of extracting it indirectly from stressed marine food chains. The phospholipid component is sunflower-based, which also supports a more renewable sourcing approach.

I believe this is where the industry needs to move: away from extraction where possible, and toward cultivated, traceable, and ecologically lighter systems. Preventing overharvesting and biodiversity loss will not come from better storytelling.

Sourcing right: The first step in scientific ayurveda

Innovation in Ayurveda today lies in bridging classical wisdom with modern scientific validation. At Kapiva, our approach to product development begins with a deep understanding of medicinal plants, their origin, cultivation conditions, and phytochemical composition. Variation in geography, soil, and harvesting practices can significantly influence the bioactive profile of herbs; therefore, we focus on responsible sourcing and rigorous botanical authentication. We follow a farm to formulation approach that combines traditional Ayurvedic wisdom with modern scientific validation to ensure consistent quality and efficacy.

A key part of our innovation philosophy is building strong partnerships with farmer communities and cultivation partners across India. By identifying optimal growing regions

DR R GOVINDARAJAN
Chief Innovation Officer, Kapiva

and promoting responsible cultivation practices, we ensure that medicinal herbs are harvested at the right stage of maturity and handled carefully to preserve their natural bioactive compounds. Alongside responsible sourcing, we follow rigorous quality protocols where every batch of raw material undergoes detailed testing for identity, purity, safety parameters, and key phytochemical markers before it enters the formulation process. This integrated approach helps us maintain consistency, authenticity, and scientific integrity in every Kapiva product.

Standardisation is a critical pillar of Kapiva's commitment to delivering high quality Ayurvedic products. Medicinal plants often contain multiple bioactive compounds, and their concentrations can vary depending on the plant part used and the conditions in

which they are grown. To address this, we apply advanced botanical authentication and analytical testing to ensure consistency and authenticity of our raw materials. For instance, in the case of Ashwagandha (Withania somnifera), we employ deeper botanical and genetic verification methods, including DNA profiling and Phytochemical fingerprinting, to confirm the identity of the plant material and ensure that the extract used in our formulations comes from the root or another part known to contain a higher concentration of key active compounds.

Every finished formulation undergoes rigorous batch level evaluation to ensure safety, potency, and consistency before it reaches consumers. Through this integrated framework, we aim to deliver authentic Ayurveda based wellness solutions that align with the quality expectations of consumers worldwide.

Industry collaboration is key for common sustainability standards and guidelines

In the nutraceutical industry, sustainable sourcing refers to obtaining raw materials responsibly in a way that protects the environment, respects human rights, and ensures the future availability of resources. This approach helps prevent ecosystem damage caused by overharvesting, soil degradation, and pollution. It also ensures fair wages and safe working conditions for growers and collectors while supporting local communities and maintaining long-term ingredient availability.

Today's consumers increasingly demand transparent and ethically sourced products that align with both personal health and environmental well-being, making sustainability a crucial competitive factor for companies in the industry.

Major challenges

- **Complex and opaque supply chains:** Raw materials often pass through multiple intermediaries (growers, collectors, brokers, and refiners), making it difficult to track actual sourcing practices and increasing the risk of unethical or unsustainable activities.
- **High cost of verification:** Obtaining credible certifications such as organic, fair-trade, or biodiversity-friendly labels requires significant investment of time and money, particularly for smaller suppliers or companies managing large ingredient portfolios.
- **Higher costs in price-sensitive markets:** Adopting sustainable agricultural practices, ensuring fair wages, and implementing regenerative methods can increase production costs. However, in highly competitive markets, passing these costs on to consumers can be challenging.

SHANKARANARAYANAN JEYAKODI
Co-Founder & Managing Director, ZeusHygia LifeSciences

- **Unclear standards and misleading claims:** The lack of universally accepted definitions and standards allows vague terms such as "green" or "natural" to be used loosely. This can lead to misleading marketing practices and undermine the credibility of genuinely sustainable initiatives.
- **Exposure to environmental changes:** Climate variability, including changing rainfall patterns, rising temperatures, and extreme weather events, can threaten the cultivation of key botanical ingredients and make it difficult to maintain consistent quality and supply.

Way forward

- **Foster industry collaboration**: Companies should work with industry associations to establish common definitions, standardised sustainability frameworks, and stronger guidelines to prevent misleading claims. This can help simplify compliance and build trust across the value chain.

Companies should work with industry associations to establish common definitions, standardised sustainability frameworks, and stronger guidelines to prevent misleading claims

- **Develop resilient sourcing systems**: Encouraging climate-resilient agricultural practices such as diversified cultivation and soil restoration can strengthen supply chains. Additionally, investing in scientific innovations like plant cell culture for rare botanicals and diversifying sourcing regions can reduce environmental and supply risks.

When implemented effectively, sustainable sourcing strengthens supply reliability, protects natural ecosystems and communities, and positions companies as responsible leaders in a rapidly growing industry.

Beyond price: How sustainability is reshaping nutra ingredient sourcing

Sustainability is no longer a peripheral concern indeed it has become a strategic imperative that is fundamentally redefining how the nutra industry sources its ingredients. Today, companies are moving away from transactional procurement models towards long-term, value aligned partnerships with suppliers who demonstrate environmental responsibility, ethical labour practices, and supply chain transparency.

The shift is being driven by a convergence of forces which is increasingly discerning consumers who demand clean label, ethically sourced products; regulatory frameworks that are tightening around traceability and environmental impact; and investors who now factor ESG performance into their evaluation of nutra businesses. A Simon-Kucher 2024 study found that 64 per cent of respondents ranked environmental sustainability among their top three purchasing considerations after price (Ayanabio) — a clear signal that sustainability has moved from preference to expectation.

In practice, we are seeing a growing pivot towards locally and regionally sourced botanicals and bioactives which is a trend that simultaneously reduces carbon footprint and supports indigenous agricultural communities. India, home to over 1,700 medicinal plants including *curcumin, bacopa*, and *ashwagandha*, and endowed with 52 agroclimatic zones, is uniquely positioned to lead this transition on the global stage (StudyIQ). At ENAC, we have been actively advocating for sustainable sourcing to be embedded as a foundational principle across the Indian nutra value chain not as a compliance checkbox, but as a genuine competitive advantage.

The policy environment is beginning to reflect this urgency. A landmark Stakeholder Consultation co-chaired by the Secretaries of the Department of Agriculture and Farmers Welfare and the Ministry of AYUSH, held in May 2025 at Krishi Bhawan, brought together multiple ministries, state horticulture missions, and private sector leaders in medicinal plant cultivation (Agrotech Space) — underscoring the highest levels of government intent to place sustainable sourcing at the centre of India's nutra growth story.

SANDEEP GUPTA
Chief Founder & Director, Expert Nutraceutical Advocacy Council (ENAC)

To build a robust and credible sustainable sourcing framework requires companies to look well beyond price and availability. Based on my experience in the industry, I would highlight five critical factors:

1. Traceability and supply chain transparency: Companies must be able to trace every ingredient back to its origin like farm, region, and cultivation practice. Technology tools such as blockchain enabled traceability platforms are increasingly being adopted to provide this visibility, and are fast becoming a market differentiator.

2. Certification and third-party validation: Recognised certifications such as organic, Fair Trade, Rainforest Alliance, or COSMOS lend credibility to sustainability claims and build trust with healthcare professionals and end consumers alike. In India, sourcing from GACP (Good Agricultural and Collection Practices)-certified farms for key botanicals such as organic Ashwagandha is increasingly becoming the quality and ethics benchmark for reputable manufacturers. (TanishQ Life Care) These should be treated as a baseline, not an optional add-on.

3. Supplier engagement and capacity building: Sustainability cannot be imposed from the top down. Companies must invest in educating and empowering their supplier base particularly smallholder farmers on sustainable agricultural practices, water conservation, and responsible harvesting. Indian companies like Akums Drugs & Pharmaceuticals have demonstrated this by working directly with local farming communities to ensure raw materials are cultivated sustainably, simultaneously supporting local economies and environmental preservation.

4. Biodiversity and species conservation: Particularly relevant in the context of herbal and botanical ingredients, companies must ensure that sourcing volumes do not threaten wild plant populations. Cultivated sourcing should be prioritised wherever wild-crafted alternatives put ecosystems at risk.

5. Regulatory alignment and anticipation: The CSIR Nutraceutical Sector Task Force, established in November 2021 and chaired by the Principal Scientific Adviser to the Government of India, brings together FSSAI, the Ministry of AYUSH, the Department of Commerce, and the Department of Pharmaceuticals to streamline regulations, simplify trade through customised HSN codes, and align India's standards with global benchmarks. (Agrotech Space) Companies that proactively build compliance into their sourcing frameworks rather than reacting to mandates will be far better positioned for long term resilience. Globally, leading ingredient companies like DSM Nutritional Products and Evonik Industries are already pivoting towards plant based and algae derived alternatives specifically to meet the growing demand for sustainable ingredient sourcing (Technavio), a direction India's industry must track closely.

Ultimately, sustainable sourcing is not a cost centre, it is an investment in brand equity, regulatory readiness, and the long-term health of our industry's raw material base.

Making sustainable sourcing work in India

In terms of sustainable sourcing, the challenge in India is that it remains a highly price-sensitive market. Sustainable ingredients often increase the cost of production significantly. So the challenge becomes finding the right balance between sustainability and affordability.

That said, we have certain non-negotiables when working with suppliers. For example, our suppliers must have proper certifications such as GMP compliance. These quality and compliance standards are essential for us when selecting partners.

Beyond sourcing, we are also trying to improve how we communicate with our customers. We want to help consumers understand what goes into our products and why.

Personally, I stay very active on our social media channels and regularly respond to questions and direct messages from customers. We also include detailed product information leaflets with our products to help consumers better understand the formulations.

AKSHITA SINGLA
Co Founder, Akya Wellness

Sustainable ingredients often increase the cost of production significantly. So the challenge becomes finding the right balance between sustainability and affordability

In addition to digital communication, we are focusing on community engagement. For instance, just this past weekend we hosted a matcha-making workshop where about eight or nine women participated. These small community interactions help us connect directly with consumers and build trust.

Why evidence-backed formulations matter in the nutraceutical industry

Saloni Anand, Co-Founder, Traya Health, shares her perspective on the rapidly expanding nutraceutical market in India and the growing gap between consumer expectations and real results

India's nutraceutical market is booming. More consumers than ever are looking beyond conventional medicine for solutions to chronic health concerns, hair loss, gut issues, hormonal imbalances, skin conditions, and metabolic disorders. The demand is real. The intent is genuine. But there's a growing gap between what consumers are being sold and what actually works. And if we, as an industry, don't address that gap honestly, we risk losing the very trust that's fuelling this growth.

I say this from experience. When my co-founder Altaf and I started Traya in 2019, we entered one of the most crowded and, frankly, most misleading categories in health and wellness: hair loss. The market was saturated with products making sweeping promises. Shampoos are claiming 99 per cent hair fall reduction, often measuring hair breakage during washing, not actual hair loss from the root, and then presenting it as a hair loss solution. These are fundamentally different measurements, but most consumers don't know that. Biotin gummies are positioned as miracle pills. Oils endorsed by celebrities who'd probably never used them. Consumers were spending money, not seeing results, and growing increasingly sceptical of the entire category.

We saw two problems. First, most products treated symptoms without diagnosing the cause. Second, almost none of them had credible clinical evidence behind their claims. That's not a hair care problem alone. That's a nutraceutical industry problem.

The trust deficit is real

Today's consumer is more informed than ever. They Google ingredients. They read labels. They compare products on Reddit threads and Instagram comments. Yet the nutraceutical industry continues to operate on a model where claims outpace evidence. "Clinically tested" is used loosely sometimes,

referring to individual ingredient studies conducted in entirely different contexts, dosages, or populations. "Dermatologist recommended" often means a single doctor was consulted, not that a rigorous trial was conducted.

This isn't just a marketing problem. It's a consumer safety problem. When someone takes a nutraceutical for six months based on a claim that has no robust evidence, they're not just wasting money; they're losing time. In health, time matters. When we analysed data from over five lakh Indian men, one finding stood out: 50.31 per cent of Indian men experiencing hair loss are below the age of 25. Hair loss in India is increasingly a young person's problem, and the window to act early is being lost to products that promise results they cannot deliver.

Why we chose clinical validation

At Traya, we made a conscious decision early on: if we're going to ask people to trust us with their health, we need to earn that trust with data, not marketing.

Our landmark clinical study was conducted with MS Clinical Research Pvt Ltd, a six-month, single-blinded, parallel-controlled study with 135 male participants in India, aged 18–45, across Stages 1–4 on the Norwood Scale. The study was authorised by an ethics committee and registered with the Clinical Trials Registry of India (CTRI), launched by the Indian Council of Medical Research. We used diagnostic tools like Trichoscan, Dinolite, and CaseLite for objective measurement. We included both a placebo group and a 5 per cent minoxidil group. The study was designed the way a pharmaceutical trial would be not as an internal marketing exercise but as a genuine test of whether our approach works.

The results were clear: Traya's personalised regimen delivered 3x greater hair density improvement than 5 per ceny minoxidil alone, with 78.84 per cent reporting significant improvement in hair quality, including shine and smoothness, and 96.97 per cent reporting stronger hair. All findings were statistically significant and measured against objective diagnostic tools across hair density, hair thickness, hair fall reduction, and hair quality. It's important to be transparent about what this comparison means. This was

not a single formulation versus a single formulation. It was an integrated treatment system versus the most established single molecule for hair regrowth. The study tested whether a holistic, multi-science approach could outperform the gold standard standalone treatment. And it did significantly.

The study was published in the International Journal of Research in Dermatology, a peer-reviewed medical journal. That publication matters because it's not us claiming efficacy. It's the scientific community validating it independently.

I should also note what the study didn't cover. The trial was conducted on male participants with androgenetic alopecia within an Indian demographic. We're transparent about those boundaries because that's what evidence-based practice demands. We don't extrapolate beyond what the data supports.

Was this expensive? Yes. Was it time-consuming? Absolutely. Could we have launched faster and louder without it? Of course. But we chose proof over promises. And I believe every nutraceutical brand making health claims owes its consumers that same standard.

The problem with ingredient-level evidence

One of the most common shortcuts in the nutraceutical space is citing ingredient-level studies to justify product-level claims. A brand uses biotin, references a study showing biotin supports hair health, and then implies their product will deliver the same result. But the study may have used a different dosage, a different delivery format, a different population, and a different duration. The leap from "this ingredient has shown promise" to "our product works" is not a small one. It's a chasm.

This is not just an ethical concern; it's a regulatory one. The Food Safety and Standards (Health Supplements, Nutraceuticals, Foods for Special Dietary Uses, Foods for Special Medical Purposes, Functional Foods and Novel Foods) Regulations, 2016, require that claims be substantiated and not misleading. Yet the industry routinely operates in grey areas, relying on ingredient-level literature rather than product-level proof. As the FSSAI framework continues to evolve, brands that have already invested in finished-product evidence will be ahead of the curve, not scrambling to catch up.

What matters is finished-product evidence testing the actual formulation, at the actual dosage, on the actual target population, over a meaningful duration. That's what separates a nutraceutical company operating with integrity from one operating on borrowed credibility.

At Traya, our formulations integrate Ayurveda, Dermatology, and Nutrition into a single regimen. Each of these sciences has its own evidence base. But we didn't stop at individual ingredients. We tested the complete kit the way a real customer would use it and measured outcomes over six months. That's the standard the industry should be moving towards.

Ayurveda deserves better

This matters especially in the Indian context, where Ayurveda is a significant part of the nutraceutical landscape. Ayurveda carries centuries of wisdom around internal balance, gut health, dosha management, and tissue nourishment. But that wisdom has been diluted by brands that slap "Ayurvedic" on a label without any clinical rigour behind the formulation.

We don't position Ayurveda as an alternative to evidence-based medicine. We position it as complementary. Our clinical study was designed to test exactly this: whether integrating Ayurvedic principles with modern dermatology and nutrition science could outperform even the most established single-molecule treatment. And it did. That's how you bring credibility to traditional knowledge systems, not by making them compete with modern science, but by proving they can work alongside it.

If the nutraceutical industry wants Ayurveda to be taken seriously on a global stage and India has every reason to lead that conversation, we need to back it with the same rigour we'd expect from any pharmaceutical claim. Anything less does a disservice to the science itself.

What needs to change

Three things, and they're not complicated.

First, finished-product clinical trials should become the norm, not the exception. If you're making a health claim, prove it on your product, not on an isolated ingredient from someone else's study.

Second, transparency in communication. Tell consumers what your study actually measured, how long it ran, how many participants were involved, what demographic it covered, and what the limitations were. Consumers are smart. They respect honesty. What erodes trust is vagueness dressed up as science.

Third, the regulatory ecosystem needs to keep pace with the market's growth. FSSAI has laid important groundwork, but as the nutraceutical category scales rapidly, standards for clinical substantiation should tighten, not to stifle innovation, but to protect consumers and reward brands that invest in doing things the right way.

The business case for evidence

Some will argue that clinical trials are too expensive, too slow, and unnecessary for nutraceuticals. I'd push back on all three.

At Traya, our clinical validation has been one of our strongest business assets. It gives our medical team confidence in what they prescribe. It gives our hair coaches credibility when they support a customer through a five-month journey. It gives consumers a reason to trust us over the dozens of alternatives making louder claims with less proof.

Separately, the outcomes speak for themselves. We've served over 12 lakh customers across India. Among users who followed our personalised regimen consistently for five to six months under hair coach guidance, 93 per cent saw results. Those are two different data points, scale and outcomes, and I'm deliberate about not conflating them. That precision is part of what evidence-backed practice means.

Evidence isn't a cost. It's a competitive advantage. In a market where consumer scepticism is rising, the brands that invest in proof will be the ones that earn long-term loyalty. The brands that don't will keep chasing the next marketing trend, wondering why retention is low and trust is lower.

The nutraceutical industry in India is at an inflection point. We can either build it on a foundation of evidence, transparency, and consumer trust or we can let it become another category where promises outpace outcomes. I know which side Traya stands on. The question is whether the rest of the industry is willing to hold itself to the same standard.

Natural products vis-à-vis modern drugs

Dr Ashok Omray, Pharma Advisor, Mumbai, opines that despite growing interest in wellness and nutraceuticals, herbal medicines remain on the margins of mainstream therapy. He discusses the need to bridge tradition with science

Nature supports human life better than anything else. We possibly cannot survive without fresh air, clean water, and sunlight. Besides being vital requirements for the biological system, they also play an important role in maintaining agility, vitality, and adequate energy levels. Basic food, essential micronutrients, and immunity are also built in nature. Then why are we not very comfortable with natural products or herbal drugs as therapeutic agents?

The Indian kitchen as a natural pharmacy

Any Indian home kitchen is—or used to be—a "Natural Products Pharmacy." Those of us who may be 50+ would know how our mothers and grandmothers had solutions for all routine health-related problems. Cough and cold, stomach and digestion problems, minor injuries, sprains, bruises, even minor cuts and wounds—for everything an immediate medicine was available from the kitchen.

We all know the common spices and flavours used in Indian dishes—asafoetida, fennel, cumin, cardamom, cloves, turmeric, fenugreek, mustard, ghee, honey, menthol, cinnamon, ginger, eucalyptus oil, and many other ingredients. These materials are not new and have been recorded to possess proven anti-inflammatory, antiarthritic, antidiabetic, cholesterol-reducing, and lipid-balancing activities. Then why are they devoid of recommendation? These are the main ingredients of home-based remedies.

There used to be inhalations, decoctions, elixirs, tinctures, digestants, tonics, cough remedies, toothache relievers, anti-inflammatory and analgesic preparations, etc. These were very popular and almost mandatory until the early seventies. Based on the symptoms, an immediate prescription was ready, and only when relief was not obtained or the problem aggravated after a day or two did a visit to the doctor become necessary.

Modern kitchens have all the devices, but there is hardly any cooking. It is mainly warming, heating, or boiling using microwave ovens and electric kettles. As a result, even for normal food we wait for junk or street food packets from outside. These practices are among the main causes of lifestyle diseases and the consequent dependence on lifestyle drugs.

The rising cost of healthcare

Over the last two decades, in the 21st century, there has been enormous emphasis on health management and healthcare. People and governments are allocating huge funds towards better health management and addressing health- or life-threatening emergencies. In spite of all this, the cost of treatment and diagnostic procedures is skyrocketing. Many people even say that more than the treatment itself, the diagnostic tests and doctors' fees are what fleece patients.

No wonder today every tenth shop in the market is a diagnostic centre, pathology lab, or sample collection centre. I had read a full coverage on this subject in one of the issues of The Aware Consumer about two years back. I am convinced that proper diagnosis is the key to the right direction of treatment, irrespective of the medicinal system we adopt.

With a new hospital and/or a new doctor, all the tests are often repeated—and that too at specifically recommended laboratories only (if the hospital does not have its own testing facilities). Repeated MRI, CT scans, X-rays, pathology tests, and blood levels of Vitamin D and B12 are equally expensive. Mostly, hospitals have their own pharmacy for selling the drugs prescribed by doctors within the hospital premises.

These drugs are mostly branded generics and sold at MRP. The same branded generic drugs are available from chemist shops at discounts of 10–25 per cent on the MRP. In reality, human health (the human body) has become a very big business—almost like a cash crop. This is not a criticism of present medical practices; rather it is an eye-opener.

Hospitals are no longer merely treatment centres; they are hospitality resorts with room categories like General/Dormitory, Twin Sharing, Deluxe, Super Deluxe, Premium, etc., and accordingly the nursing and caretaker charges also shoot up. I am somewhat sceptical that medical insurance may also be one of the reasons for treatment costs escalating. Medical insurance should benefit the patient/customer rather than becoming a driver of business.

This also exposes the pricing system of drugs. A myth has been widely spread among the 144 crore people of this country that generic drugs are available at less than 10 per cent of the price of branded products. We need to recognise the fact that there are hardly any brand-new or innovative drugs in the Indian market developed by Indian companies. More than 99 per cent of drugs are generic drugs.

The difference is similar to that between Tewari's sweets and sweets from an un-

named shop, or Haldiram's bhujia and bhujia from a local snack shop. Presentation and sales promotion matter. Quality may still remain a question mark.

Haldiram and Bhikhaji have brand ambassadors like Amitabh Bachchan, who may charge huge sums for promotion. What we often fail to realise is that ultimately the customers pay for this, not the business owners.

A few years ago, a similar marketing tactic was adopted by a large pharma company. It featured famous cricket players Mr Anil Kumble and Mr Sourav Ganguly walking in a laboratory wearing shoes and three-piece suits without masks or caps, claiming that the company used DMF-grade materials to manufacture its drug products even for the domestic market. After a couple of months, that advertisement was withdrawn. Who really knows—or even bothers to know—what DMF implies, including the brand ambassadors?

The manufacturing cost of any drug product, irrespective of the company operating under CGMP norms, should not differ by more than 5 per cent, largely because of similar overhead costs.

The above discussion highlights the tricks, gimmicks, and USPs being adopted in the ethical business of drugs and pharmaceuticals. The question then arises: what is the status of natural products—or, to be precise, Ayurvedic and herbal products—both in business and in the minds of people?

Natural products industry: Presence but limited acceptance

There are almost a dozen big names in the field of natural or herbal drug products, some of which are more than 80 years old. We commonly think of Dabur, Himalaya Wellness, Emami, Sami Labs, Charak, Baidyanath, Hamdard, Vicco, Sandu, Patanjali, etc., besides thousands of small and medium companies operating across the country.

During the last three decades, Sami Labs and Patanjali have come into prominence. Natural products are highly sought after when we talk about nutraceuticals, cosmeceuticals, and protein drinks. However, the situation is very different when we discuss drugs for curing ailments and serious diseases.

Several companies dealing with herbal medicines have been in existence for more than 70 years—or even a century—yet their business often runs on sympathy and sentiment. There are wellness clinics, but there are not many takers of natural products as medicines, except in dire situations when survival itself is uncertain and modern medical and surgical systems have exhausted their options.

The question remains unanswered: why are natural products and herbal drugs still not prescription drugs among the urban population, and why are these systems not practiced with equal seriousness across the country or globally?

The Ministry of AYUSH may be doing wonderful work in creating awareness about natural therapies and natural products as therapeutic agents, but I do not see very significant progress of natural products in medicinal applications.

I think there is a need to focus on the following important aspects for awareness and acceptability while promoting natural products as preferred therapeutic agents:

- Evolution
- Education
- Knowledge and scientific perspective
- Worldwide recognition
- Acceptance and research

There is a need to find answers and rationalise:

- Why is the self-medication of herbal (natural) substances not controlled, but instead encouraged?
- Why is it not mandatory to have complete quality control and quantitative test methods for the claimed constituents?
- Like chemical-based drugs, can we develop methods and criteria for equivalency and therapeutic efficacy?

The best prescription for good health (a disease-free life) is to align with nature for nutrition, food, and clean air and water for breathing and drinking.

Eventually, we have to resort to nature. The body is a completely biological machine, and metabolic pathways involve the application of natural secretions in various organs and glands as well as hormones and enzymes occurring naturally or generated/bio-engineered as needed.

The way forward

The need is to make natural products more scientific, consistent, and reproducible, and to develop proof of therapeutic efficacy and equivalence with modern drugs for similar indications.

With systematic research, regulatory support, and scientific validation, natural products can become an integral part of mainstream healthcare while ensuring safety, efficacy, and affordability for the larger population.

A modified probiotic could be safer for immunocompromised patients and infants

Researchers from North Carolina State University have found that a modified version of S. boulardii yeast is less likely to cause infection compared with its unmodified version

Researchers have modified a probiotic yeast to make it safer for use by immunocompromised people, older adults and infants.

The study, published in Nature's open-access journal Communications Biology, tested the modified yeast in an animal model and found that it was less likely to cause infection than unmodified strains of the same organism.

"The yeast we're working with is called Saccharomyces boulardii, which is marketed as a probiotic to promote gut health," said Alexandra Imre, first author of a paper on the work and a postdoctoral researcher at North Carolina State University.

"While these cases are rarely reported, they can be serious—even fatal"

"We wanted to learn more about what is contributing to these infections," Imre explained. "We were also wondering whether it is possible to genetically modify this yeast to make it less virulent, thus safer for immunosuppressed patient groups."

The researchers examined S. boulardii yeast cell lines isolated from various sources, including commercial probiotics and human patients with bloodstream infections.

They infected immunosuppressed mice with these yeast cell lines and isolated several sublineages from the infected mice.

The researchers then tested these sublineages to assess their responses to stressors, aiming to identify adaptations associated with increased virulence.

"We found that the isolates that were most virulent in our mouse model were also the ones that were most tolerant to osmotic stress," Imre said.

"We focused on two genes, ENA1 and NHA1, that play a substantial role in making the yeast more tolerant of osmotic stress."

The researchers genetically edited both the commercial and clinical S. boulardii isolates to delete the two genes, then repeated the virulence testing in mice and the stress testing.

"We found that deleting NHA1 made very little difference, but deleting ENA1 made a big difference," said Imre.

"We also found that deleting ENA1 resulted in impaired growth of the yeast strains when exposed to osmotic stress."

"Overall, our results showed that there is a clear correlation between osmotic stress tolerance and virulence," Imre added. "However, more research is going to be necessary to reveal the exact metabolic mechanisms behind this phenomenon; virulence attributes of emerging pathogens are under-researched."

The researchers also conducted tests using a mouse model and in vitro antimicrobial assays to determine whether modifications to S. boulardii would affect its probiotic efficacy.

They discovered that the genetically modified S. boulardii was as effective as commercially available probiotic strains in inhibiting the growth of bacterial species that commonly act as pathogens in immunosuppressed patients.

Additionally, the modified strain was equally capable of surviving in the gut, demonstrating its potential as a probiotic supplement.

"These are not exhaustive studies of probiotic efficacy, but our findings suggest the probiotic qualities of S. boulardii are not significantly impacted by deleting the genes associated with osmotic stress," said Nathan Crook, co-author of the paper and an associate professor of chemical and biomolecular engineering at NC State.

"This study demonstrates the potential for creating engineered probiotic therapies for use by immunocompromised patients. Further work is certainly necessary, but we're excited about this," he concluded.

The University of Debrecen and North Carolina State University have submitted an international PCT patent application for commercial application of the findings.

Probiotics can help or hinder gut recovery after antibiotic treatment

All probiotics are not created equal, according to new research from North Carolina State University

In a mouse model, researchers found that different probiotic strains can either accelerate or delay the gut microbiome's recovery after antibiotic treatment.

The work adds to the body of evidence suggesting that probiotic efficacy is specific and situational, and that more research is needed to understand the strain-specific impacts of different probiotics.

Probiotic supplements are often consumed after antibiotic treatment to prevent antibiotic-associated diarrhoeal disease, most commonly caused by Clostridioides difficile (C. diff).

However, the actual impact of individual probiotic strains on the gut's microbiota, or bacterial environment, is poorly understood.

"Colonisation resistance or the ability to prevent colonisation of pathogens is a function of a healthy microbiota," says Casey Theriot, Professor of Infectious Disease at NC State and corresponding author of the research. "This study looked at how long it took resistance against C. diff colonisation to return after antibiotics and the impact of two of the most commonly used commercial strains of Lactobacillus probiotic on that return."

The research team looked at three groups of mice that had been treated with cefoperazone, a commonly used broad-spectrum cephalosporin antibiotic. The first group received no probiotic treatment. The second group received L. acidophilus and the third received L. gasseri. Each group was challenged with C. diff weekly for 4 weeks and the microbiota of each group was examined to measure bacterial load and C. diff resistance.

Mice that received no probiotic showed decreased bacterial load and resistance to C. diff infection by 4 weeks after stopping antibiotics. However, the L. acidophilus mice had an increased bacterial load in weeks two and three, while the L. gasseri group had no detectable C.diff after 2 weeks. Additionally, the researchers found that L. gasseri did not colonise or remain in the gut. Instead, it was involved in the production of bacteriocins, or antimicrobial peptides, and it encouraged the growth of Muribaculaceae, another potentially beneficial bacteria.

"We have always known that it's important to understand the strain-specific impact of probiotic strains," says Rodolphe Barrangou, Todd R. Klaenhammer Distinguished Professor of Food, Bioprocessing and Nutrition Sciences at NC State and corresponding author of the research. "Depending on the condition and composition of the individual's microbiome, the disease, and the probiotic strain, you will have different effects and outcomes.

"What's interesting is that this study indicates it's more complicated than people think, because probiotics can have transient or indirect effects on the microbiome."

"L. gasseri doesn't prevent infection, it transiently promotes recovery of microbiome through Muribaculaceae, which subsequently could provide resistance. This opens new avenues to inform what we should do next."

"Although this work is in a mouse model, it shows the need for better mechanistic understanding of how probiotics affect the microbiome, because not only can they have effects weeks after they've left the body, in certain situations, they have the potential to prolong or complicate recovery."

Ashwagandha shows promise in improving cognition and sleep in children: Clinical trial

No serious adverse events were reported, and the supplement was well tolerated

A new clinical study published in Frontiers in Nutrition (March 2026) suggests that Ashwagandha root extract may support cognitive performance and sleep quality in children aged 6–12 years. The randomised, double-blind, placebo-controlled trial evaluated 85 children with parent-reported concerns related to attention, concentration, or memory. Participants received either a standardised Ashwagandha root extract (150 mg twice daily) or a placebo for eight weeks.

Key findings are:

- Children receiving Ashwagandha showed significant improvements in aspects of cognitive performance, including processing speed, memory recall, executive function, and working memory.
- Parent-reported sleep quality also improved significantly compared to placebo.
- No serious adverse events were reported, and the supplement was well tolerated.

The study adds to growing interest in plant-based interventions for cognitive and behavioral support in children, particularly given concerns around side effects associated with conventional pharmacological treatments.

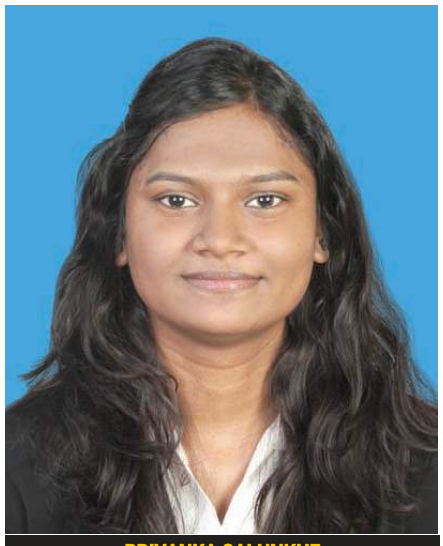
However, researchers emphasised that the findings are preliminary. The study had a relatively small sample size and short duration, and further large-scale trials are needed to confirm efficacy and long-term safety.

The trial was conducted across sites in Navi Mumbai, India, and Australia, and was registered with both the Clinical Trials Registry of India and the Australian New Zealand Clinical Trials Registry.

Thus, Ashwagandha root extract may offer a safe, non-pharma option to support cognition and sleep in children, though more robust evidence is required before broader recommendations can be made.

Clean label: Transparency that sells

Priyanka Salunkhe, Lead, Global Product Management, **Ganesh Adasul,** Deputy GM, Global Product Management and **Dr Subhashis Chakraborty,** Head - Global Product Management & Marketing, ACG, elaborate how clean label has evolved from a niche consumer preference into a powerful global movement centred on transparency, simplicity, and trust in ingredients. The authors also explore its origins, regional nuances, growing consumer influence, and how it is driving innovation across food, nutraceuticals, and capsule manufacturing



PRIYANKA SALUNKHE
Lead, Global Product Management, ACG

GANESH ADASUL
Deputy GM, Global Product Management, ACG

DR SUBHASHIS CHAKRABORTY
Head - Global Product Management & Marketing, ACG

Although no single individual or organisation formally coined the term "clean label", the concept gradually emerged in response to evolving consumer expectations. Its roots can be traced back to the 1980s and 1990s, when consumers began paying closer attention to food labels and questioning the presence of artificial additives and unfamiliar chemical names. During this period, the International Food Information Council (IFIC) described clean label foods as those containing simple, understandable ingredients, laying an early conceptual foundation for the term.

Over time, the idea gained further traction. In the 2010s, market research firms such as Innova Market Insights popularised the phrase "clean label" to describe a broader movement toward natural, minimally processed foods. Importantly, clean label remains a market-driven term rather than a regulated definition, reflecting consumer perceptions rather than legal standards. What initially began as a desire to avoid artificial additives (such as E-numbers) has since evolved into a wider demand for transparency, recognisable ingredients, and honesty in food manufacturing.

Global perspective and regional differences

The clean label trend has become significant across both the United States and Europe, although the emphasis differs slightly between regions. Europe was an early adopter, driven by strong consumer interest in naturalness, transparency, organic production, and ethical sourcing. In contrast, the US market has experienced rapid growth more recently, with consumer demand largely centred around GMO-free and additive-free products.

Beyond Western markets, the meaning of clean label varies regionally. For example, Asian consumers increasingly associate clean label products with environmental sustainability, while consumers in Latin America, North America, and Europe tend to prioritise claims such as "no additives or preservatives" in clean label products. Despite these regional nuances, the underlying driver remains consistent: a growing desire for simpler, healthier, and more transparent food choices.Error: Reference source not found

The role of the consumer in driving clean label adoption

At the heart of the clean label movement lies the consumer. More informed and health-conscious than ever before, consumers today are more willing to pay a premium or switch brands in exchange for products that provide clearer and more trustworthy labelling. This shift reflects growing concerns about personal health and well-being, as well as a desire to better understand what goes into everyday food products.Error: Reference source not found

Research by Aschemann-Witzel, Varela et

al. highlights that this trend has also encouraged consumers to gravitate towards certified organic foods, allergen-free products, and related claims.Error: Reference source not found These preferences are driven by modern health concerns, negative associations with chemicals, scepticism toward functional food developments, and discomfort with unknown or unfamiliar ingredients.Error: Reference source not found In response to these changing expectations, companies worldwide have increased investments in exploring novel ingredients and gaining deeper insights into consumer perceptions of clean label products.

Impact on new product development

As consumer demand continues to rise, clean label considerations are now deeply embedded in new product development (NPD) strategies. Nearly one in three new product launches carries some form of clean label claim. Among these, the most common claims include "no additives or preservatives" (15%), followed by "organic" (10%), environmental claims like ethical or sustainable sourcing and eco-friendly packaging, etc. (8%), and "GMO-free" and "natural" (5%).

These claims are particularly prominent in children's and everyday food categories, with baby and toddler food accounting for over 70% of clean label launches. This trend underscores how clean label positioning has become especially important in products associated with health, safety, and long-term well-being.

An Indian success story: The Whole Truth Foods

The clean label movement has also gained strong momentum in India. A notable success story is The Whole Truth (Foods), founded in 2019 by Shashank Mehta, a former FMCG marketer. Motivated by his personal experiences with misleading "healthy" food products, Mehta set out to build a brand centred on ingredient transparency and honest communication.

The company's growth reflects increasing consumer trust in clean-label brands. According to Tracxn, The Whole Truth reported revenues of ?70.6 crore in FY24, up from ?36.7 crore in FY23, demonstrating the commercial viability of transparency-driven food businesses in the Indian market.

At the heart of the clean label movement lies the consumer. More informed and health-conscious than ever before, consumers today are more willing to pay a premium or switch brands in exchange for products that provide clearer and more trustworthy labelling

The expansion of clean label principles into supplements

While clean label initially focused on removing artificial additives, the concept has expanded significantly—particularly within the supplements and nutraceutical sector. Today, clean label encompasses simple and recognisable ingredients, minimal processing, organic certification, and even nutritional enhancements such as reduced sugar or added fibre.

Consumers increasingly prefer familiar ingredient names (e.g., Vitamin E instead of tocopherol), shorter ingredient lists, and limited use of manufacturing aids. In response, brands are adopting natural alternatives and relying on third-party testing to build credibility and consumer confidence. Globally, many companies continue to promote products as clean label based on evolving interpretations of consumer expectations.

Clean label innovation in capsule manufacturing: ACG's approach

Consumer demand for clean label products has also influenced the capsule manufacturing segment. Traditionally, capsules were primarily gelatin-based, followed by a shift toward plant-based HPMC capsules in response to the natural and vegetarian trend. With the rise of clean label expectations, ACG has positioned itself at the forefront of innovation in this space.

ACGcaps™ H+ (HPMC-based capsules) are manufactured using advanced thermogelation technology and contain only clean label ingredients—HPMC and water. These capsules are free from preservatives and suitable for a wide range of pharmaceutical and nutraceutical applications. The growing demand for such capsules has led ACG to establish a dedicated manufacturing facility in Aurangabad.

ACG's commitment to transparency goes beyond self-declaration. ACGcaps™ H+ undergo rigorous testing through both in-house and external laboratories and have been certified as Clean Label by an independent certification body named Clean Label Project® in the United States, making them the first of their kind in the capsule industry.

The shift in consumer preference has propelled product manufacturers to reformulate existing products, which usually means the substitution of synthetic colourants or additives with cleaner alternatives or the introduction of recognisable and simple ingredients. During this innovation journey, ACG developed ACGcaps™ NTone, offering naturally colored capsule options, ACGcaps™ TSafe, titanium dioxide-free capsules, and recently introduced Vegan Printed Capsules, further expanding clean and natural choices for consumers - once again setting industry firsts. Together, these innovations enable brands to adopt natural colourants, TiO2-free, vegan, preservative-free, and fully traceable capsule systems that safeguard ingredient potency while aligning seamlessly with global clean-label expectations.

Conclusion

As consumers become more aware of the ingredients they consume and have easier access to information and alternatives, manufacturers face growing pressure to provide cleaner, more transparent products. This shifting landscape is expected to drive continuous innovation and disruption within the food, supplements, and nutraceutical industries in the coming years.

References:

[1] https://www.innovamarketinsights.com/trends/clean-label-trends/
[2] Addressing Clean Label Trends in Commercial Meat Processing: Strategies, Challenges and Insights from Consumer Perspectives - PMC
[3] Consumers' categorization of food ingredients: Do consumers perceive them as 'clean label' producers expect? An exploration with projective mapping - ScienceDirect
[4] https://cleanlabelproject.org/

Vitafoods India 2026 spotlights India's expanding role in global nutraceutical innovation

The exhibition and conference provided a platform for manufacturers, ingredient suppliers, regulators, researchers and industry associations to discuss emerging opportunities in preventive healthcare, functional nutrition and science-backed wellness solutions

The fourth edition of Vitafoods India 2026 brought together key stakeholders from across the nutraceutical, functional food and dietary supplement ecosystem at the Jio World Convention Centre from 11–13 February 2026. The event, held in Mumbai, attracted more than 10,000 trade visitors and featured over 200 exhibitors, highlighting India's growing influence in the global nutraceutical landscape.

Organised by Informa Markets, the exhibition and conference provided a platform for manufacturers, ingredient suppliers, regulators, researchers and industry associations to discuss emerging opportunities in preventive healthcare, functional nutrition and science-backed wellness solutions.

Industry momentum and market outlook

India's nutraceutical industry is entering a decisive phase of expansion, supported by rising health awareness, demographic shifts and the increasing adoption of preventive healthcare. Industry estimates suggest the market could approach USD 24 billion by 2032, while global projections indicate the nutraceutical market may reach USD 919 billion by 2030.

Despite strong domestic demand, India's global market share remains under two per cent, pointing to significant growth potential. Industry participants at the event emphasised that strengthening regulatory alignment, improving quality standards and building globally credible brands will be essential for India to transition from being primarily an ingredient supplier to a producer of high-value finished formulations.

Demographic trends are also expected to shape future demand. By 2050, India's elderly population is projected to reach approximately 347 million, creating growing demand for functional foods and nutraceutical solutions supporting healthy ageing, metabolic balance, cognitive health and immunity. At the same time, a rising middle class is increasingly investing in daily wellness and preventive health products.

Key themes from the conference

Running alongside the exhibition was a three-day conference organised around the theme "Nutri-Critical 2030: Science, Standards and Scale for India's Global Significance." The sessions focused on regulatory frameworks, research and innovation, personalised nutrition, women's health, microbiome science and sustainable nutrition.

Experts highlighted that the industry is moving steadily towards clinically validated and evidence-based nutraceutical formulations. Increasing consumer awareness is also pushing companies to prioritise transparency, traceability and scientific substantiation of health claims.

Personalised nutrition emerged as a significant growth area, driven by advances in health data analytics and changing consumer expectations. Meanwhile, the expanding focus on women's health, gut health and healthy ageing is opening new opportunities for ingredient innovation and product development.

Leadership dialogue and industry collaboration

A new addition to the 2026 edition was the Leaders Roundtable, a closed-door strategic forum developed in collaboration with the Expert Nutraceutical Advocacy Council. The roundtable brought together senior professionals from ingredient manufacturing, research and development, regulatory affairs and policy advocacy to discuss the sector's long-term growth priorities.

Industry leaders emphasised the need for stronger collaboration between regulators, academia and industry to support research, product innovation and regulatory clarity. Such collaboration is expected to play a critical role in helping Indian nutraceutical companies expand their presence in global markets.

Strong participation from industry players

The exhibition floor showcased a wide range of companies involved in ingredients, finished nutraceutical products, contract manufacturing and packaging solutions.

Industry participants at the event emphasised that strengthening regulatory alignment, improving quality standards and building globally credible brands will be essential for India to transition from being primarily an ingredient supplier to a producer of high-value finished formulations

Many exhibitors highlighted innovations in botanical extracts, plant-based ingredients, advanced delivery formats and clinically researched nutraceutical ingredients. The show also featured dedicated engagement areas such as the Global Trends Zone, Innovation Zone and Tasting Zone, where attendees could experience emerging formulations and product formats.

Policy environment and ecosystem support

Industry discussions also reflected the role of policy support in accelerating sector growth. Recent measures including increased government allocation for the AYUSH sector and initiatives aimed at strengthening quality standards and export readiness were highlighted as important drivers for the industry.

The event received support from several industry bodies including the Health Foods and Dietary Supplements Association, the Association of Food Scientists and Technologists of India, the Chamber for Advancement of Small and Medium Businesses, and Women in Nutraceuticals, reflecting strong institutional participation.

As preventive healthcare continues to gain prominence and consumers increasingly turn to functional nutrition, the nutraceutical sector is expected to play a larger role in India's healthcare ecosystem. Platforms such as Vitafoods India are emerging as important forums for aligning scientific innovation, regulatory frameworks and commercial opportunities.

With its focus on research, collaboration and industry dialogue, Vitafoods India 2026 reinforced its position as a key meeting point for stakeholders shaping the future of nutraceuticals and wellness in India and beyond.

Virosil Pharma: A Swiss eco-friendly disinfectant

Virosil Pharma effectively protects critical surfaces that come in contact with pharma products

Sanosil Biotech, a Mumbai-based company is the first company to pioneer the novel concept of eco-friendly fumigation in sterile areas completely replacing the use of carcinogenic proven formalin. The product Virosil Pharma is based on Hydrogen Peroxide (H2O2) with Silver ions. The combination of these two ingredients gives a synergistic broad spectrum of activity on all kinds of viruses, bacteria, fungi, yeasts, molds, protozoa and algae. It is a clear, colourless, odourless, tasteless disinfectant which is non-carcinogenic, non-mutagenic, revolutionary and can be used where other chlorine based disinfectants have been feared.

Virosil Pharma is presently being used in organisations and institutions such as Pfizer, Cipla, Dabur, Ranbaxy, J&J, Abbott, Serum Institute, Dr Reddy's, Lupin Labs, Cadila Healthcare, Wockhardt, Biocon, Astrazeneca, Reliance Life Sciences, etc., as a very effective fumigant and disinfectant providing an environment with microbial containment and a completely safe and sterile environment

Virosil Pharma effectively protects critical surfaces that come in contact with pharma products. Manufacturing, filling, packing and storage areas; Instruments, equipment, water tanks and pipelines – can now be pathogen free.

What's more, there's no need to re-wash disinfected surfaces or instruments since H2O2-based Virosil Pharma safely decomposes into water and oxygen.

The formulation has been tested in various reputed institutions in Switzerland, France, Germany, Australia and India.

MIC determination - Method based on modified BSEN13704 (sporicidal)

Test Organisms: 1) Bacillus subtilis ATCC 6633

How effective is it?

Even at low dosages, Virosil Pharma has the power of penetrating bio-film and killing the actual bacteria, thereby providing a long residual level of disinfection

How safe is it ?

It cannot pollute waste water, because it breaks down into water and oxygen, i.e. it produces no noxious by-products.

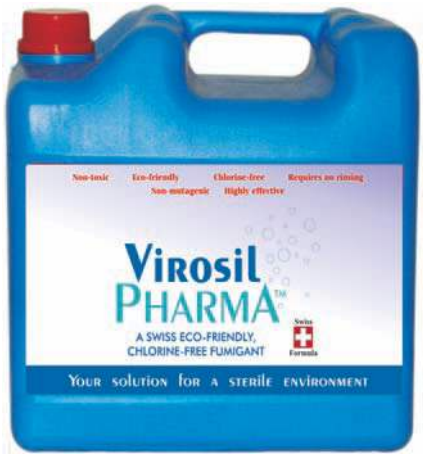
VIROSIL PHARMA
For bacteria- free surface & Pipelines

How does it compare to chlorine?

Virosil Pharma is superior to chlorine since it imparts no taste or odour to the water and is highly effective at both hot and cold temperatures

How does it work ?

H2O2 is a strong oxidising agent (more powerful than chlorine or chlorine dioxide). The oxygen separated from H2O2 destroys the biofilm, enabling the silver to help destroy any bacteria or virus.



Disinfecting biofilms using Virosil Pharma

Virosil Pharma not only successfully penetrates bio-films and eliminates bacteria but also maintains a long residual level of disinfection in water tanks and pipelines.

Using Virosil Pharma overcomes the disruption problem because it is absolutely safe to leave it in the water. Better still, the longer it's in the water, the better the results since it will attack the biofilms which harbour most of the bacteria populations.

The company also offers a customised disinfection audit on its website; www.sanosilbiotech.com

Contact details
Dev Gupta, CEO,
Sanosil Biotech
Warden House,
1st floor,
Sir PM Road, Fort,
Bombay 400 001
Tel No. 022 22872295 / 43112700 /
+919820016292
email: info@sanosilbiotech.com

RESULTS TABLE2- Microbial Counts Post Disinfectant Exposure in CFU/ml

	Microbial Counts in CFU/ml			Microbial Counts in Log Values			Log Reductions			Log Reductions		
	Virosil I0%			Virosil I0%			Virosil I0%			Virosil I0%		
	5 mins	30 mins	60 mins	5 mins	30 mins	60 mins	5 mins	30 mins	60 mins	5 mins	30 mins	60 mins
B subtilis	4900	2300	310	4.7411	5.0696	5.9400	3.6901	3.36178	2.4913	99.9981	99.9991	99.9998

COLORCOAT® RAPID

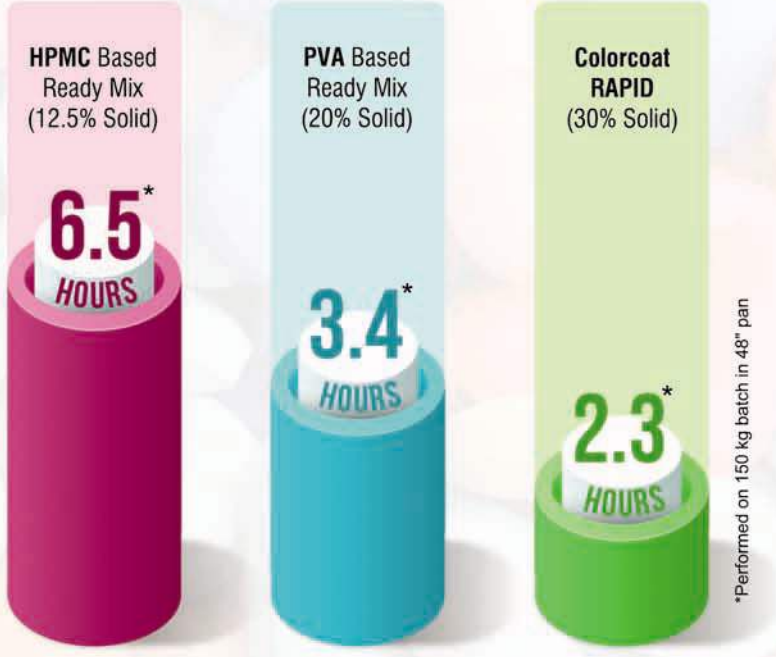
RAPID IS FUTURE-FUTURE IS RAPID

ACCELERATE

COATING EFFICIENCY

BENEFITS

- Solid level up to 30% facilitate rapid coating with high productivity gains
- Saves coating process time up to 40%
- Rapid solution preparation
- Save energy consumption
- Process Adaptability with smooth and glossy appearance
- Easy scale-up in different equipment types or manufacturing sites
- Suitable for batch and continuous processes
- Regulatory support



*Performed on 150 kg batch in 48" pan

COREL PHARMA CHEM
the next generation polymer technologist...

Corel House, Opp. Bhagwat Petrol Pump,
S. G. Highway, Gota,
Ahmedabad - 382 481, Gujarat, INDIA

Tel: +91-8000880011/22/33
E-mail: corel@corelpharmachem.com,
marketing@corelpharmachem.com
Website: www.corelpharmachem.com

ACRYCOAT • COLORCOAT • ACRYPOL • ACRYSOL • KYRON • NUTRACOAT • ACRYFLOW

PIOMA chemicals
Partnering Through Innovation

37 YEARS Since 1989

LUJIAN BIOLOGICAL

Lactitol Monohydrate	Maltitol
Xylitol	Sorbitol

- Natural Sugar Free Sweeteners
- Pharmaceutical Compliant
- Prevent Dental Cavities
- No Bitter After Taste

The right ingredient can make all the difference in your formulations

Talk to us
for more information

101-103, Shyam Kamal 'D', Agarwal Market, Vile Parle (E), Mumbai - 400 057, India
Tel: +91-22-45212000 | Email: products@pioma.net