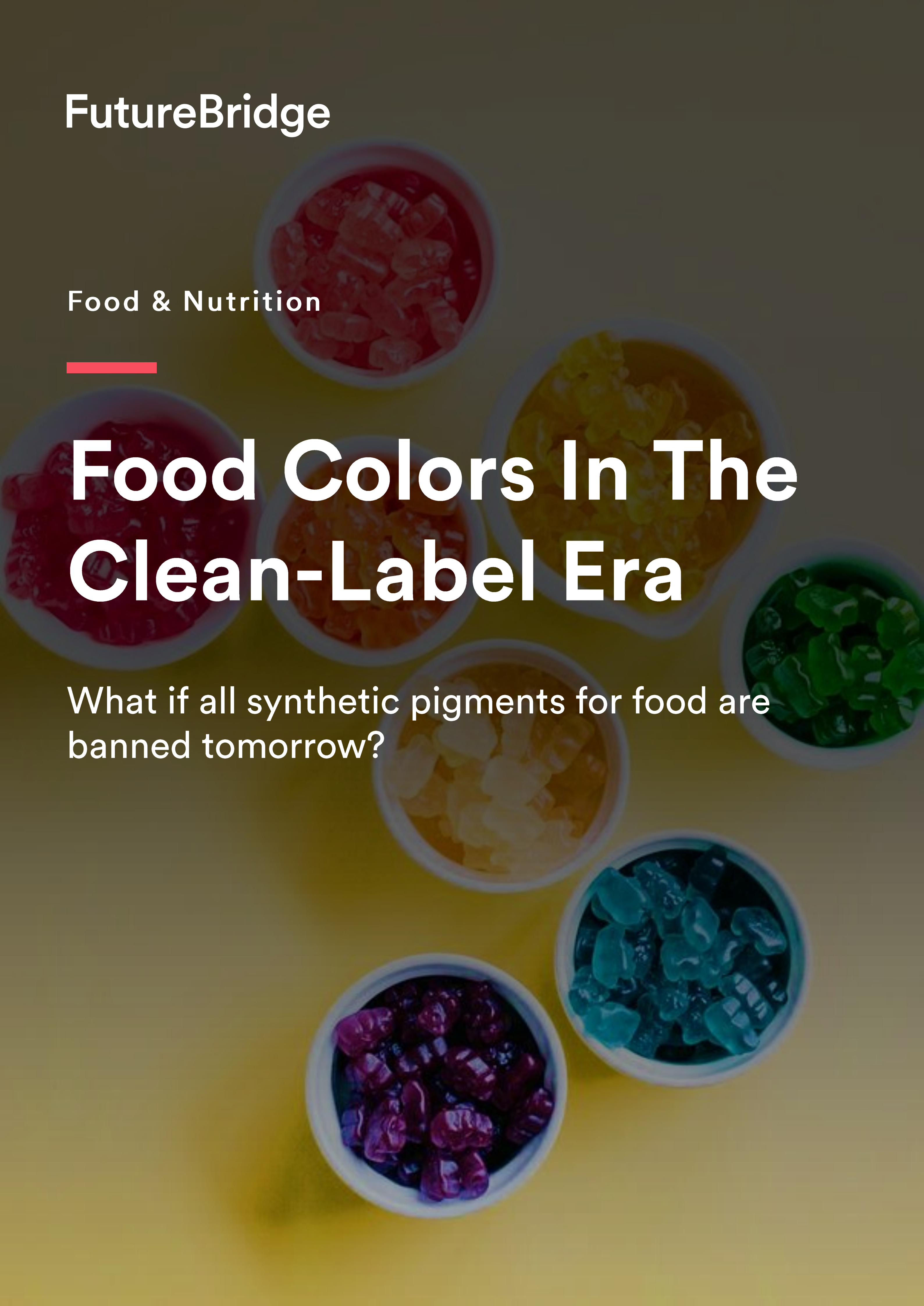
FutureBridge

Food & Nutrition

Food Colors In The Clean-Label Era

What if all synthetic pigments for food are banned tomorrow?



By 2026

the US plans to phase out synthetic dyes, following the ban of Red No. 3 in food in January 2025

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1. Reimagining food colors for the clean-label era

Food colorants are undergoing a profound shift. Increasingly stringent global regulations, heightened consumer scrutiny, and sustainability pressures are accelerating the food industry's pivot from synthetic dyes to natural pigments.

This report explores emerging natural pigment sources and advanced extraction technologies – with a special focus on lycopene as a key natural red pigment.

The Food Color Revolution

Regulations are driving a shift to natural colors, and consumers are demanding clean, transparent ingredients – they want to eat what they can trust.

2028

Compliance deadline for elimination of Red No.3 in the US

56%

of US adults try to avoid foods with chemical-sounding ingredients

KEY FINDINGS:

- US to phase out majority of petroleum-based dyes from food
- Industry mandated to shift to natural colorants – derived from fruit and vegetable sources
- Lycopene emerges as a versatile, cross-category natural red pigment – based on proprietary CLEAR framework
- It requires advanced analytics for precise profiling, and innovative extraction & delivery systems (nano-emulsification) to boost yield, purity, stability, and sensory impact in food

ACTION REQUIRED

- Prioritize and initiate phased reformulation timelines
- Collaborate and develop category-specific pigment solutions
- Build clean-label stories resonating with consumer emotions

It's not just about color – it's about credibility

What If

...all synthetic colors are banned in the industry, globally?

...natural pigment supply chain becomes constrained?

...food pigments are expected to deliver health benefits, not just color?

Synthetic pigments dominate but their time is ending

Today, synthetic pigments like Red No. 3, Yellow No. 5, and Brilliant Blue dominate many food categories due to their low cost, high stability, and vivid hues.

Color	Synthetic pigment	General applications
	Red No. 3 (Erythrosine) Red No. 40 (Allura Red) Carmine	Beverages, candies, gummies, snacks, sauces, dairy, meat, cakes, gums, and more
	Orange B Yellow 5 (Tartrazine) Yellow 6 (Sunset Yellow) Citrus Red No. 2	Soft drinks, pickles, desserts, chips, sauces, cereals, bakery, candies, snacks, and more
	Blue 1 (Brilliant Blue) Blue 2 (Indigo Carmine)	Beverages, dairy, confections, frostings, candy, desserts, creams, and more
	Green 3 (Fast Green)	Ice creams, dairy, jellies, desserts, gummies, and more
	Purple 2 Black 2 Titanium Dioxide Others	Jams, jellies, beverages, syrups, beer, confections, dairy, frostings, sauces, and more

Health, regulatory, and consumer shifts are sidelining synthetics

While synthetic pigments have offered technical advantages for decades, the combination of health, regulatory, environmental, and consumer concerns is making them increasingly untenable in modern food systems.

1. Health Risks

Several synthetic dyes have been linked to potential health risks, including hyperactivity in children, genotoxicity (e.g., titanium dioxide), and possible carcinogenicity.

2. Consumer Backlash

"Artificial colors" are flagged as unacceptable by health-conscious consumers and clean-label retailers.

3. Environmental Impact

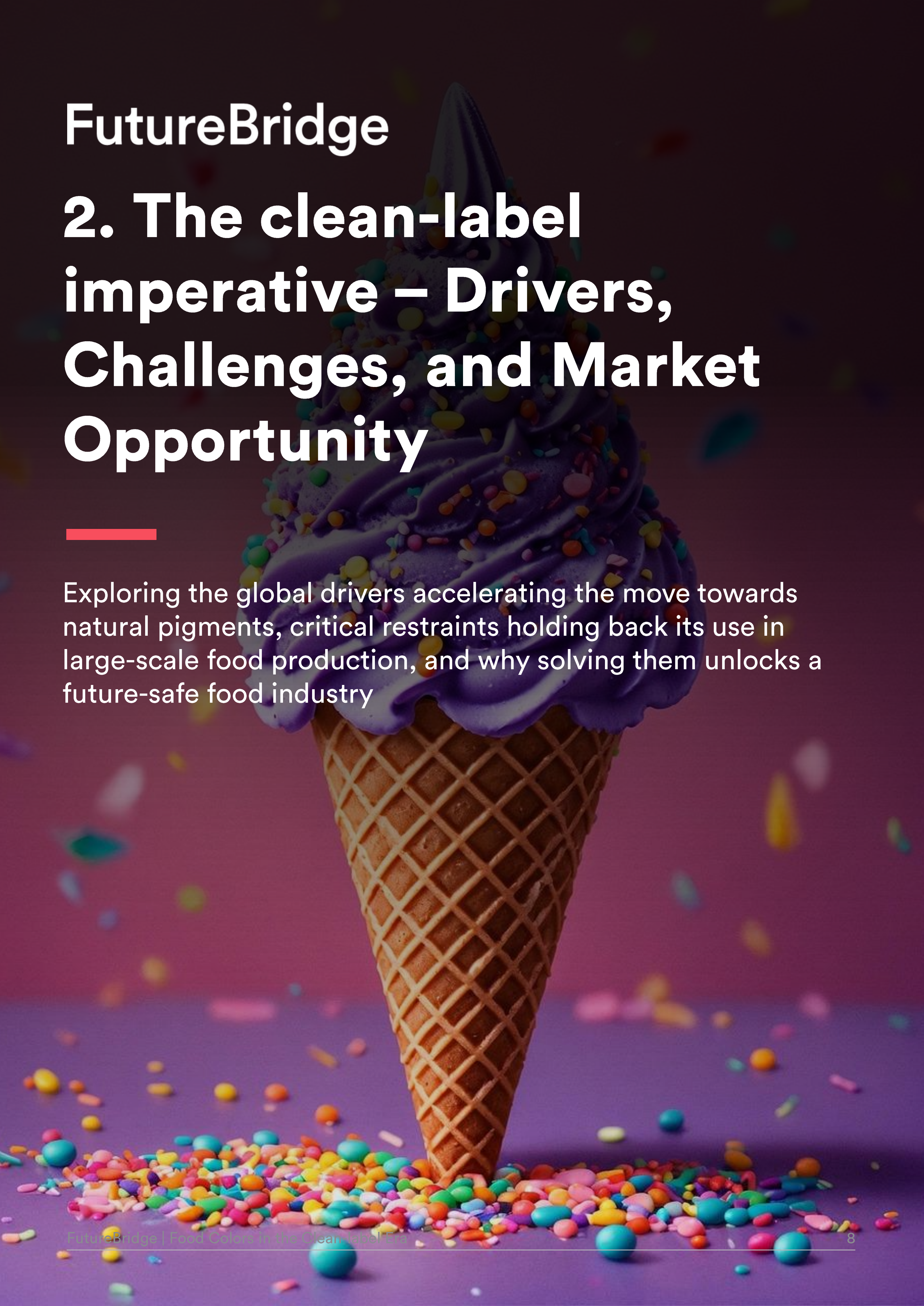
Petroleum-based and non-renewable – contradicting ESG and sustainability commitments.

4. Regulatory Headwinds

Global regulatory inconsistencies create trade barriers and restricts global brands to use a unified formulation.

5. Formulation Friction

Swapping synthetic with natural pigments impacts taste, stability, shelf life, and positioning.



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2. The clean-label imperative – Drivers, Challenges, and Market Opportunity

Exploring the global drivers accelerating the move towards natural pigments, critical restraints holding back its use in large-scale food production, and why solving them unlocks a future-safe food industry

Market momentum is shifting toward natural colorants

Synthetic food pigments are gradually phasing out as natural ones gain strong regulatory push, consumer-driven momentum and market growth.

In 2025

FDA revoked authorization for the use of **Red No.** 3 in food. It is also initiating a process to revoke Citrus Red No. 2 and Orange B soon.

By 2026

The US plans to phase out all petroleum-based synthetic food dyes.

75%

of global consumers are willing to pay more for clean-label, artificial color-free products.

2.6 Bn USD

Forecasted global value of natural food colors by 2028.

Source: FDA | FCM | Statista

Global regulatory shifts are accelerating the transition

Global regulations are increasingly restricting synthetic food dyes and driving a shift toward safer, natural color alternatives. The US to phase out key synthetics by 2026, EU mandating warning labels, and India, China and Japan tightening allowable limits.

In April 2025, the FDA announced it will phase out all petroleum-based synthetic dyes by 2026, including revoking authorization for Citrus Red No. 2, Orange B, and Red Dye 3.

Certain synthetic dyes, such as Red 40 and Yellow 5, require warning labels indicating potential effects on children's attention and activity.

GB 2760 outlines the standards for the use of food additives, including synthetic colors. China is encouraging the use of natural food colors derived from fruits and vegetables.

FSSAI permits specific synthetic colors, including Tartrazine, Sunset Yellow FCF, and Brilliant Blue FCF, among others. Products containing synthetic colors must declare them on labels.

Japan allows specific synthetic colors, such as Food Blue No.1 and Food Red No.3, under strict conditions. The use of terms like "artificial" and "synthetic" is prohibited on food labels to avoid misleading consumers.

Industry experts endorse natural colors but with considerations

“We’ve been leading the transformation of the industry now for a long time on sodium reduction, sugar reduction, and better fats. Sixty percent-plus of our portfolio today doesn’t have any artificial colors."

Ramon Laguarta (PepsiCo – CEO)

“Danone is looking to remove artificial dyes from its US portfolio, which includes the Yo Crunch and Light & Fit brands. The company is working to determine how it can remove artificial dyes from across its portfolio.”

Shane Grant (Danone – CEO, America)

“It’s not like there’s 150 million pounds of beet juice sitting around waiting on the off chance the whole market may convert. Tens of millions of pounds of these products need to be grown, pulled out of the ground, extracted.”

Paul Manning (Sensient – CEO)

“Study after study has shown that if all companies were to remove synthetic colors from their formulations, the supply of the natural alternatives would not be enough. We are not really ready.

Monica Giusti - Food color expert (Ohio State University)

‘Natural’ isn’t easy due to stability, sensory, and sourcing issues

While the shift to natural pigments aligns with clean-label demands, companies must navigate challenges like instability, regulatory inconsistency, limited color range, off-notes, and supply chain variability – factors that can impact formulation performance, product appeal, and scalability.

Key Challenges

Stability issues

Susceptible to degradation from light, pH, oxygen, and heat. Colors can fade or shift over shelf life.

Regulatory complexity

Synthetic usage varies by region – some colors approved in the EU may not be in the US, and vice versa.

Limited color range

Difficult to match the bright, uniform intensity of synthetic dyes (especially blues and greens).

Higher cost

More expensive to extract and produce, especially in purified or standardized forms.

Sensory trade-offs

Some natural pigment sources (e.g., turmeric, beet) can affect flavor profiles, if not properly masked or purified.

Supply variability

Agriculture-dependent sourcing to impact procurement and quality.

3. Case for Natural Pigments: Functional, Familiar, Future-Ready

Natural pigments are derived from plants, algae, or minerals used to color food. With rising health concerns and clean-label demand, this section explores why the food industry must shift to natural colors to ensure safety, transparency, and consumer trust.

Natural pigments are functional, familiar, and future-ready

What are natural pigments?

Natural pigments are bio-derived color compounds derived from various botanical, microbial, and algal sources – including fruits, vegetables, flowers, roots, seeds, leaves, and even certain fungi and marine organisms.

Why it matters?

Natural pigments offer dual value – visual appeal and clean-label positioning. They bring added health benefits and align with consumer expectations for minimal processing and natural origins.

As natural pigments gain traction in clean-label product innovation, their thoughtful integration into formulation becomes key to balancing aesthetics, nutrition, and processing requirements.

From reds to blues in nature's palette: A full-spectrum view

Natural food pigments are categorized as carotenoids, anthocyanins, betalains, chlorophylls, curcuminoids, and phycobiliproteins – each contributing distinct color ranges and functional properties.

Carotenoids offer warm tones like yellow, orange, and red; anthocyanins provide pH-sensitive hues from red to blue; **betalains** deliver vibrant reds and yellows; and chlorophylls contribute green shades. **Curcumin** yields a bright yellow, while **phycobiliproteins** are notable for rare natural blues and pinks.

Carotenoid
- Lycopene
- Beta-carotene
- Lutein
- Canthaxanthin
- Astaxanthin
- Capsanthin

Anthocyanin
- Cyanidin
- Delphinidin
- Malvidin
- Pelargonidin
- Peonidin
- Petunidin

Phycobiliprotein
- Phycoerythrin
- Phycocyanin
- Allophycocyanin

Betalain
- Betanin
- Indicaxanthin

Chlorophyll
- Chlorophyll a
- Chlorophyll b

Curcuminoid
- Curcumin

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4. The red pigment priority

Red is deeply tied to food appeal, indicating sweetness, freshness, and indulgence. But, as Red No. 3 gets banned, there is an urgent need for safe, scalable natural alternatives.

Red is the strategic battleground for natural color reformulation

Red pigments are central to sensory and psychological cues in food – linked with sweetness, indulgence, and freshness. From the vibrant crimson of strawberries to the deep maroon of beetroot, red pigments are more than just visual enhancers – they influence perception, consumer behavior, and even nutritional value.

As Red No. 3 faces bans, the industry is racing to replace it with stable, safe, and vibrant natural alternative.

This report further explores the science, challenges, and opportunities behind natural red pigments, and why getting “red” right matters more than ever.

Natural red pigments: Key sources from plants, fruits, algae

Food-grade natural red pigments can be derived from diverse sources including vegetables, fruits, algae, fungi, and marine organisms. While lycopene is commonly extracted from tomatoes, emerging sources like watermelon are also noted. Similarly, sweet potatoes, bell peppers, berries, and select marine sources offer valuable alternatives for natural red pigment extraction.

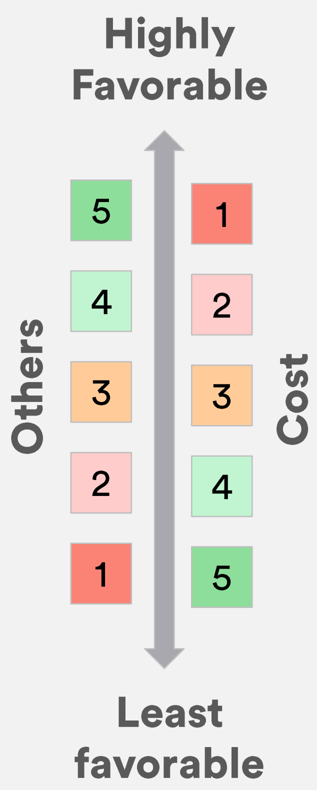
Pigments	Sources		
Lycopene	Tomatoes	Watermelon	Pink grapefruit
Beta-carotene	Carrots	Sweet potatoes	Algae
Canthaxanthin	Fungi	Algae	Crustaceans
Astaxanthin	Algae	Krill	Crustaceans
Capsanthin	Red bell pepper	-	-
Cyanidin	Cherries	Blackberries	Red cabbage
Delphinidin	Hibiscus	Blueberries	Eggplant skin
Malvidin	Grapes	Blueberries	Elderberries
Pelargonidin	Strawberries	Radishes	Raspberries
Peonidin	Grapes	Cranberries	Cherries
Petunidin	Blueberries	Blackberries	Grapes
Betanin	Beetroot	Dragon fruit	Red Swiss chard
Phycoerythrin	Red Algae	-	-

Lycopene emerges as the leading red pigment: Scalable and Stable

Our analysis identifies lycopene as the top-performing natural red pigment due to its scalable extraction, regulatory acceptance, high efficacy and purity, better sensory appeal, and broad application versatility.

Comparative analysis of red pigments (CLEAR Framework)

Pigment	C	L	E	A	R	Rank
Lycopene						1
Beta-carotene						2
Capsanthin						3
Betanin						4
Pelargonidin						5
Astaxanthin						6
Phycoerythrin						7
Cyanidin						8
Peonidin						9
Canthaxanthin						10
Malvidin						11
Petunidin						12
Delphinidin						13



- **C** (Cost): Relative affordability based on sourcing, yield, and production
- **L** (Label impact - Efficacy): Effectiveness in delivering stable, intense color and functional benefits
- **E** (Experience - Sensorial Impact): Degree to which the pigment alters the flavor, aroma, and taste
- **A** (Applications): Suitability across diverse food and beverages
- **R** (Refinement - Purity): Ease of obtaining a clean, high-quality extract

5. Lycopene Deep-dive

Lycopene development and incorporation entail host of analytical, extraction, and delivery technologies vital for its overall quality and efficacy. Advanced identification coupled with novel extraction and delivery technologies are key to sustainable and cost-effective natural colorants.

Lycopene's strategic role in the post-synthetic era

With global regulations phasing out synthetic reds like Red 40 and Red 3, lycopene emerges as a clean, compliant, and vibrant natural alternative – sourced from tomatoes, watermelon, and more, and trusted for its safety, stability, and consumer appeal.

Key Benefits:

Natural origin
Aligns with clean-label and organic positioning

Color vibrancy
Provides a bright red to deep reddish-orange hue

Oil soluble
Ideal for fat-based or emulsion products (e.g., dressings)

Nutritional appeal
Allows for health-positioned claims when permitted

Applications:

And More...

Beverages

Dairy

Snacks and Bakery

Sauces and condiments

Plant-based meat

Unlocking lycopene: Extraction, Stabilization, and Delivery Tech

Advanced extraction and delivery methods such as Supercritical Fluid Extraction (SCFE) and pressurized extraction drive scalable, cost-efficient production of lycopene – prized for its antioxidant activity, vibrant red and orange-yellow hues, and global regulatory approval.

Key findings:

1. The convergence of **scalable extraction and intelligent stabilization** position lycopene and beta-carotene as most commercially viable red pigments with diverse food applications

2. **Supercritical and pressurized extraction** techniques deliver consistent yield and stability, addressing key scalability issues with natural pigment production

3. Advanced delivery systems like **Metal-Organic Frameworks and spray drying** help enhance red pigment stability and shelf life, enabling broader formulation possibilities

4. **Ultra-High-Performance Liquid Chromatography coupled with Near Infrared and Artificial Intelligence** combines precision with speed to streamline overall red pigment quality

Lycopene: From identification to formulation optimization

Pigments undergo three critical processing stages: Identification/purification, extraction, and delivery/stabilization. Advanced analytical tools enable precise profiling and quantification, while innovative extraction and delivery systems enhance yield, purity, stability, and sensory performance across food and nutraceutical applications.

1

Identification & Purification

Enables precise detection, quantification, and isolation of red pigments from diverse sources, ensuring high purity and stability – critical for their efficacy as natural colorants

2

Extraction

Facilitates efficient recovery of red pigments from various sources, maximizing yield and preserving pigment integrity – vital for cost-effective and high-quality natural colorant production

3

Delivery & Stabilization

Enables effective encapsulation and stabilization of red pigments, enhancing their bioavailability, shelf life, and sensory performance

NIR+AI is the most promising tech for lycopene characterization

Near Infrared (NIR) + Artificial Intelligence (AI) and Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QToF) are high-impact tools for lycopene characterization, offering rapid, sensitive, real-time insights – even in complex food matrices. Their precision and scalability make them essential for quality assurance and formulation in food and nutraceuticals.

Comparative analysis of Identification/Purification technologies

Technology	Energy Efficiency	Scalability	Yield	Cost	Stability	Sensory Impact	Composite Score*
NIR + AI	Most Favorable	Most Favorable	Moderately Favorable	Most Favorable	Most Favorable	Most Favorable	2.8
Fourier Transform Infrared Spectroscopy (FTIR)	Most Favorable	Moderately Favorable	Moderately Favorable	Most Favorable	Most Favorable	Least Favorable	2.5
LC-QToF	Least Favorable	Least Favorable	Most Favorable	Most Favorable	Most Favorable	Most Favorable	2.6
Orbitrap-MS (High-resolution Mass Spectrometry)	Least Favorable	Least Favorable	Most Favorable	Most Favorable	Most Favorable	Most Favorable	2.6
Ultra-High-Performance Liquid Chromatography (UHPLC)	Moderately Favorable	Moderately Favorable	Most Favorable	Most Favorable	Most Favorable	Least Favorable	2.6
Raman Spectroscopy	Least Favorable	Least Favorable	Most Favorable	Moderately Favorable	Most Favorable	Most Favorable	2.4
Nuclear Magnetic Resonance (NMR) Spectroscopy	Least Favorable	Least Favorable	Least Favorable	Most Favorable	Most Favorable	Least Favorable	1.9

* *Calculated as a weighted average of the 6 parameters under consideration*

Most Favorable | Moderately Favorable | Least Favorable

Identification & Purification – Technology Profiles

Near Infrared (NIR) + Artificial Intelligence (AI)

NIR spectroscopy integrated with AI algorithms enables **rapid, non-destructive** assessment of lycopene, enhancing accuracy and real-time decision-making in formulation workflows.

Why It Matters?

Facilitates high-throughput, in-line monitoring of lycopene levels without the need for chemical reagents or sample preparation.

Limitations:

Accuracy affected by sample variability; AI models need large, well-curated datasets for calibration.

Applications:

Lycopene optimization in ketchup, soups, sauces, and powdered formulations.

Way Ahead:

Integration with IoT-enabled processing can broaden sources and pigment types.

Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QToF)

Combines liquid chromatography with high-resolution mass spectrometry for detailed profiling of lycopene and isomers.

Why It Matters?

Accurate mass measurements and structural information, crucial for identification and assessing lycopene stability while processing.

Limitations:

High operational costs and complexity, requires skilled personnel.

Applications:

Food product development and quality assurance.

Way Ahead:

Advancements in user-friendly software and cost reduction strategies can broaden its application spectrum.

SCFE is the most favorable technology for lycopene extraction

Supercritical Fluid Extraction (SCFE) and Pressurized Liquid Extraction (PLE) stand out for their superior process efficiency, high yield, and scalability. Their capability to maintain lycopene's structural and sensory integrity makes them viable for processed food and nutritional supplements.

Comparative analysis of Extraction technologies

Technology	Energy Efficiency	Scalability	Yield	Cost	Stability	Sensory Impact	Composite Score*
Supercritical Fluid Extraction (SCFE)	✔	✔	✔	✔	✔	✔	3.0
Pressurized Liquid Extraction (PLE)	✔	✔	✔	✔	▬	✔	2.9
Pulsed Electric Field (PEF)	✔	▬	✔	✔	✔	✔	2.9
Enzyme-Assisted Extraction (EAE)	▬	✔	✔	✔	✔	▬	2.7
Ohmic Heating	▬	✔	▬	✔	✔	✔	2.6
Microwave-Assisted Extraction (MAE)	✔	▬	✔	▬	✔	▬	2.6
Ultrasound-Assisted Extraction (UAE)	▬	✔	✔	▬	✔	▬	2.5
High Hydrostatic Pressure (HHP)	▬	✔	✔	✔	▬	▬	2.6
Cold Plasma	▬	▬	✔	✔	▬	✔	2.6
Subcritical Water Extraction (SWE)	▬	✔	✔	🚩	✔	▬	2.4
Solvent Extraction (Aqueous/Ethanolic)	▬	✔	✔	🚩	▬	▬	2.3

* *Calculated as a weighted average of the 6 parameters under consideration*

✔ Most Favorable ▬ Moderately Favorable 🚩 Least Favorable

Extraction – Technology Profiles

Supercritical Fluid Extraction (SCFE)

Utilizes supercritical fluids, primarily carbon dioxide to extract lycopene from plant-based sources.

Why It Matters?

Offers a solvent-free extraction process, ensuring high-purity.

Limitations:

Requires expensive equipment leading to higher operational costs.

Applications:

Lycopene extraction with minimal thermal degradation for use in food and nutraceuticals.

Way Ahead:

Optimizing extraction parameters and exploring co-solvent systems can help enhance yield and selectivity.

Pressurized Liquid Extraction (PLE)

Employs solvents at elevated temperatures and pressures to efficiently extract lycopene from solid foods.

Why It Matters?

Rapid extraction with minimal solvent usage. Operates at low temperatures to preserve heat-labile compounds like lycopene.

Limitations:

Requires additional purification for organic solvents, leading to increased throughput time.

Applications:

Sauces, beverages, and nutraceuticals.

Way Ahead:

Integrating greener solvents and developing hybrid extraction techniques can enhance efficiency and cut costs.

MOFs rank highest among delivery & stabilization technologies

MOFs and Nano-emulsification enable controlled release, enhance bioavailability, and prevent oxidative degradation – crucial for improving shelf life and maintaining functional integrity across diverse processed food applications.

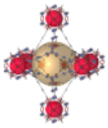
Comparative analysis of Delivery & Stabilization technologies

Technology Name	Energy Efficiency	Scalability	Yield	Cost	Stability	Sensory Impact	Composite Score*
Metal-Organic Frameworks (MOFs)	✓	✓	✓	✓	✓	✓	3.0
Nano-emulsification	✓	✓	–	✓	✓	✓	2.9
Spray Drying	✓	✓	✓	–	✓	✓	2.8
Lipid-based Carriers (liposomes, solid-lipid Nanoparticles)	✓	✓	–	✓	✓	✓	2.9
Pickering Emulsions-based Stabilization	✓	✓	–	✓	✓	–	2.7
Layer-by-Layer (LbL) Assembly	–	–	✓	✓	✓	✓	2.8
Electrospinning	✓	–	–	✓	✓	✓	2.8
Cyclodextrins-based Stabilization	✓	–	✓	–	✓	–	2.5

* *Calculated as a weighted average of the 6 parameters under consideration*

✓ Most Favorable – Moderately Favorable ⚑ Least Favorable

Delivery and Stabilization – Technology Profiles



Metal-Organic Frameworks (MOFs)

Porous crystalline materials composed of metal ions and organic ligands, offering high surface area and tunable properties for encapsulating lycopene.

Why It Matters?

Protects lycopene degradation – enhancing stability, enabling controlled release, and improving bioavailability.

Limitations:

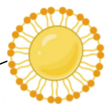
Potential toxicity of certain MOF components and scalability issues.

Applications:

Beverages, powders, and nutritional supplements.

Way Ahead:

Biocompatible and food-grade MOFs can help broaden its adoption in the food industry.



Nano-emulsification

Creates fine oil-in-water emulsions to encapsulate lycopene, enhancing its solubility and stability.

Why It Matters?

Improves lycopene bioavailability and prevents oxidation.

Limitations:

Stability of nano-emulsions can be affected by extreme pH and temperature fluctuations.

Applications:

Functional beverages and dietary supplements.

Way Ahead:

Cost-effective and scalable production methods can facilitate the integration of nano-emulsions into wide range of processed foods.

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6. The Way Forward: Turning Compliance into Competitive Advantage

As natural pigments move from niche to norm, food manufacturers and ingredient suppliers face growing pressures – from tightening regulations to complex formulation and shifting consumer expectations. This evolution presents a clear opportunity: transitioning from reactive compliance to proactive differentiation.

FutureBridge enables this shift by empowering clients with regulatory foresight, innovation scouting, and strategic partnerships – delivering future-ready, clean-label solutions that resonate with consumers and align with business goals.

Take proactive action on synthetics now

By 2030, we expect major markets to ban synthetic colorants from food. The window is short for natural reformulation.

2025 Jan

Authorization revoked
Red No. 3 is no longer permitted for use in food products in the US

2025 Apr

Initiated process to revoke authorization
Citrus Red No. 2 and Orange B in the US comes under radar

2025 May

FDA approved color additive petitions
Galdieria extract blue, Butterfly pea flower extract, and Calcium phosphate

2026

U.S. to phase out petroleum-based dyes from food
FD&C Green 3, Red 40, Yellow 5 & 6, Blue 1 & 2

2028

Elimination of Red No.3
Food companies are mandated to remove Red No. 3 from all food products

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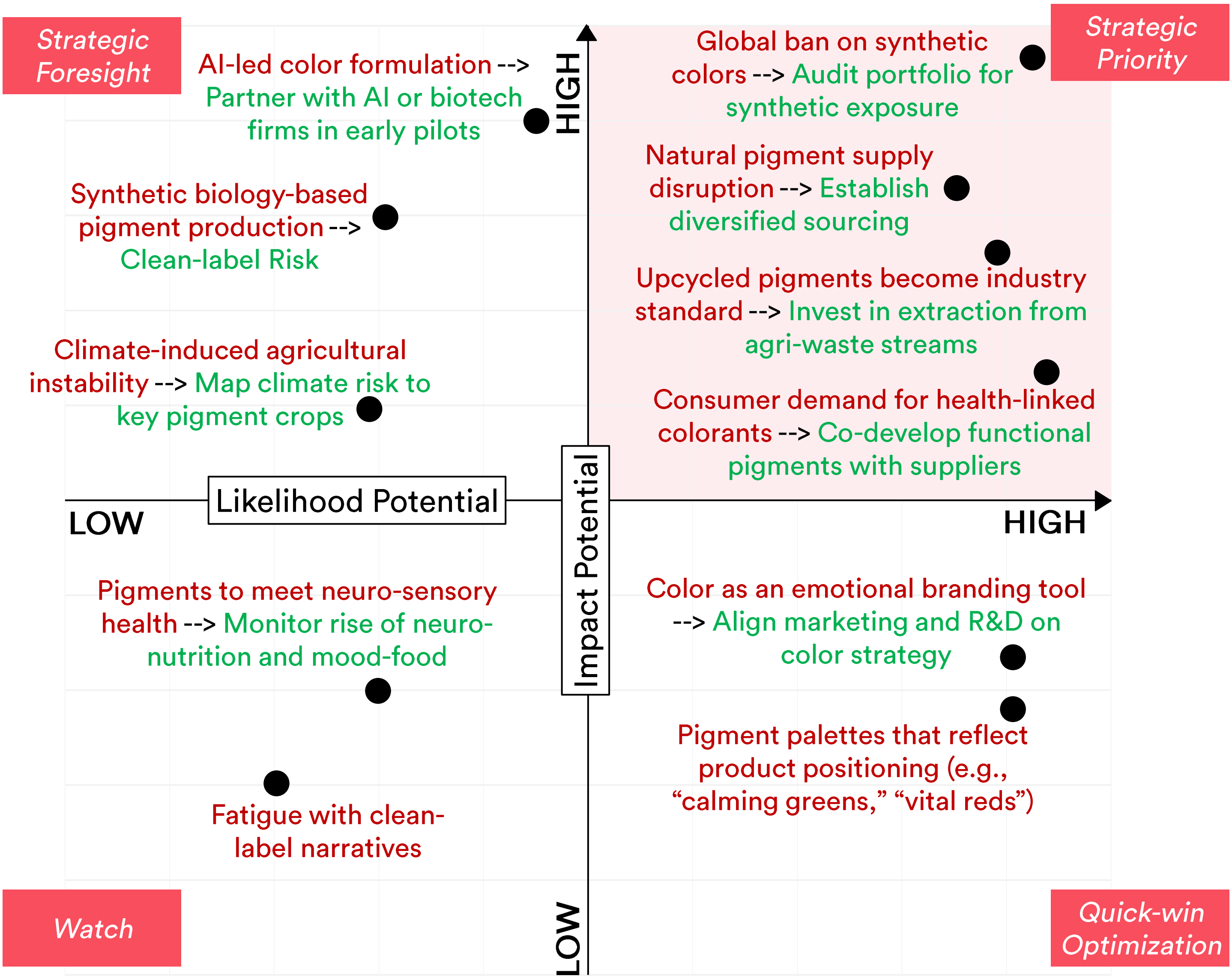
2030+

Expected complete ban on synthetic additives
Synthetic colors may face a full ban, forcing food companies into rapid, mandatory reformulation

Prioritize What's Critical, Monitor What's Emerging

Strategic Priority zone demand proactive planning, cross-functional response and accelerated response, while Strategic Foresight zone provides scenarios with emerging signals for companies to invest in monitoring and scenario modeling.

The Four Zones of Strategic Action



Impact Potential – Indicates potential consequence on product performance, brand equity, regulatory compliance, or profitability

Likelihood Potential – Indicates how probable is the scenario based on current regulatory signals, market dynamics, or technological maturity

Strategic gaps must be closed to future-proof clean-label growth

Adopting natural pigments is no longer just a regulatory necessity, it is a brand and consumer imperative. FutureBridge helps companies navigate this shift with market foresight, tech insights, and innovation support, enabling aligned action across R&D, supply chain, marketing, and regulatory.

Audit Synthetic Exposure Across Portfolio

Map SKUs using synthetic dyes and assess exposure to evolving regulatory bans

FutureBridge enables dynamic risk mapping and provides insights to support proactive reformulation planning

Fast-track Natural Pigment Pilots

Initiate pilot trials with natural pigments in priority categories to validate functionality and consumer response

We assist in shortlisting application-specific pigments and designing pilot protocols for rapid proof-of-concept

De-risk Transition with Dual-product Strategies

Offer both artificial and natural variants to manage reformulation risks and enable gradual scale-up

FutureBridge designs go-to-market strategies and guide segmentation to de-risk the transition

Translate Clean-Label into Consumer-First Narrative

Reframe color choices as part of emotional and functional storytelling (e.g., "energy from turmeric") to elevate brand connection

We help craft compelling consumer narratives that bridge technical pigment choices with wellness positioning and lifestyle messaging

Function-led action plans to drive the transition

Clear next steps for each business function to lead the shift to natural pigments and unlock competitive advantage.

R&D

Accelerate Development of Natural Color Systems

Focus on natural pigments that match synthetic dyes in hue, stability, and functionality. Leverage partnerships and advanced delivery systems.

Procurement

Secure Scalable Supply

Build reliable supplier networks and adapt processes for natural pigment integration and consistency at scale.

Marketing

Elevate Clean-Label Positioning

Craft compelling product narratives around health, sustainability, and natural sourcing to drive consumer trust and premiumization.

Regulatory

Ensure Global Compliance

Track evolving regulations (FDA, EFSA, etc.) and align formulation, claims, and labeling across markets to mitigate risk.

Meet the experts

Prakhar Agarwal

Principal Analyst

Prakhar joined FutureBridge in January 2024, bringing over 13 years of research, strategic consulting and techno-commercial experience spanning the consumer product goods sector.

Aishwarya R

Sr. Research Specialist

Aishwarya is a biotechnologist with over 6 years of experience in innovation consulting, trend forecasting, and market / competitive intelligence within the food industry.

Continue the conversation

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