



# SHAPING THE FUTURE OF INGREDIENT INNOVATION

In a New Political Era



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# AGENDA

**01** | Shifting dynamics in ingredient innovation

**02** | Reformulating for the new risk landscape

**03** | Opportunities and outlook for the next era of ingredients

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# 1. SHIFTING DYNAMICS IN INGREDIENT INNOVATION



# CHANGES UNDER NEW ADMINISTRATION

HHS issued a directive to FDA to explore rulemaking to stop self-affirmed GRAS pathways for new food ingredients.

West Virginia became the first state to enact a statewide ban on several synthetic food dyes and preservatives, including Blue No. 1, Blue No. 2, Green No. 3, Red No. 3, and Red No. 40.

The “Make Our Children Healthy Again Assessment” (MAHA report) was published.

January 2025

February 2025

March 2025

April 2025

May 2025

President Donald Trump rescinded Executive Order 14081, “Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy.”

HHS, FDA to phase out petroleum-based synthetic dyes.

# RETHINKING GO TO MARKET

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Industry players must now notice the U.S. is no longer a regulation-light outlier.

Other countries outside the U.S. are pushing the pedal on regulatory approvals.

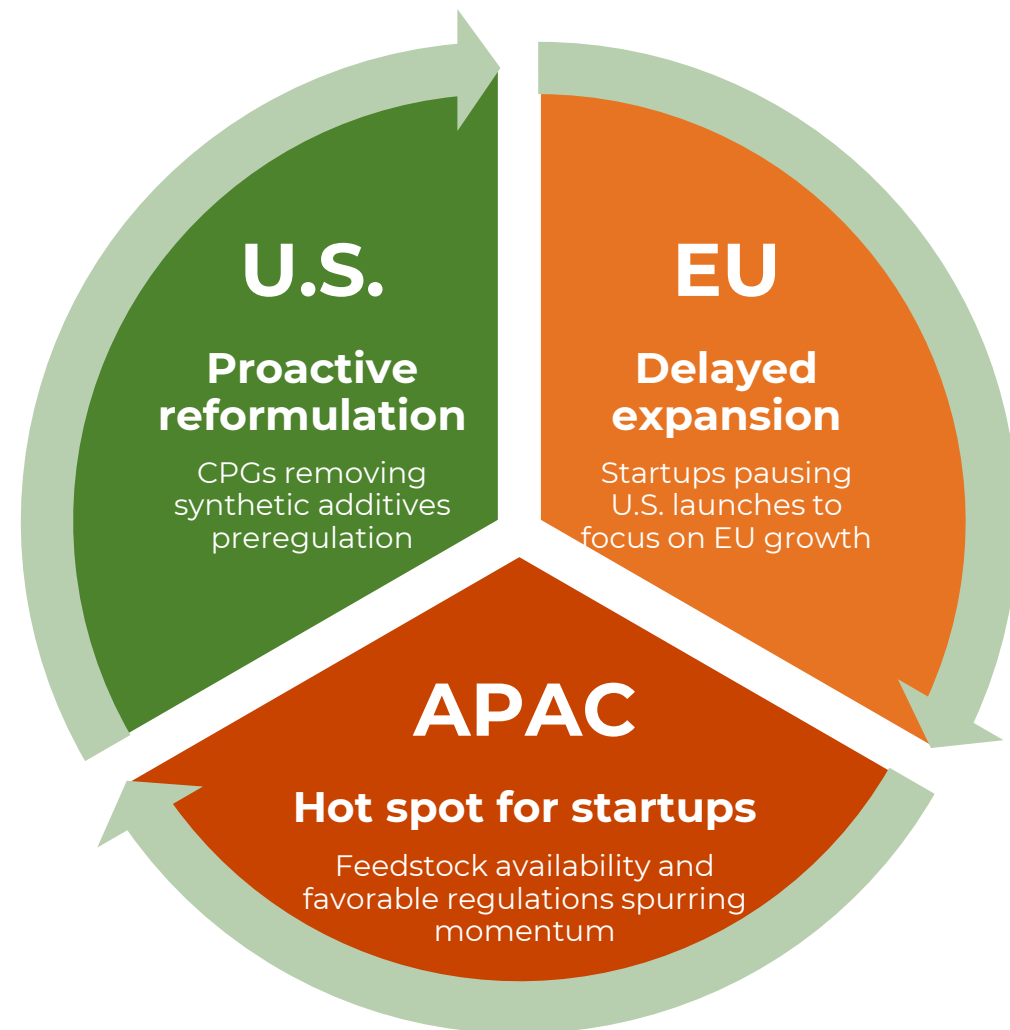
**Speedier novel food approval as UK FSA changes regulation**

**South Korea passes flagship Synthetic Biology Promotion Act**

**Singapore Food Agency Updates Industry Guidance on Safety Assessment of Novel Foods**

# INNOVATION STRATEGY RESET

U.S. policy volatility is prompting companies worldwide to rethink launch strategies and ingredient roadmaps.





# How do you build a market-resilient ingredient innovation strategy?



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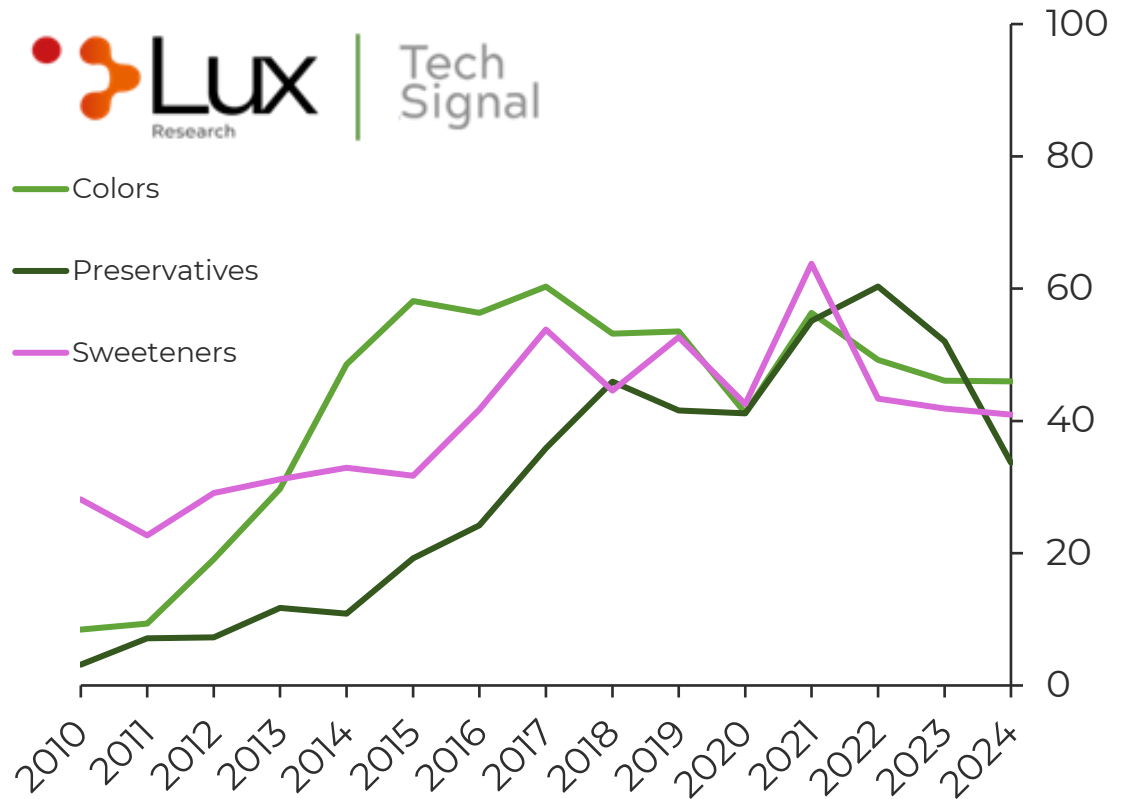
## 2. REFORMULATING FOR THE NEW RISK LANDSCAPE

# SIGNALS SHAPING INGREDIENT INNOVATION

Clean label gets functional

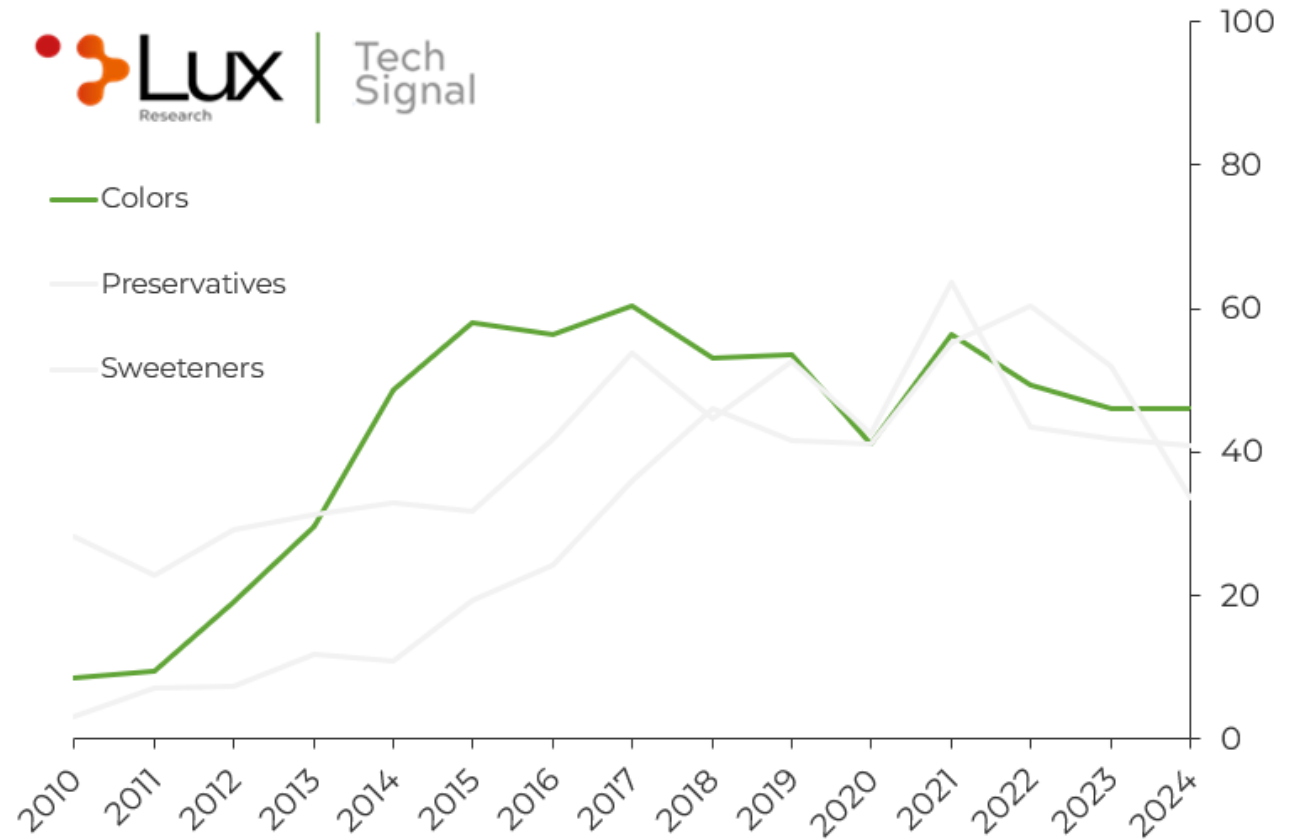
GRAS & safety reset the shelf-life game

Sugar reduction is now a structuring challenge



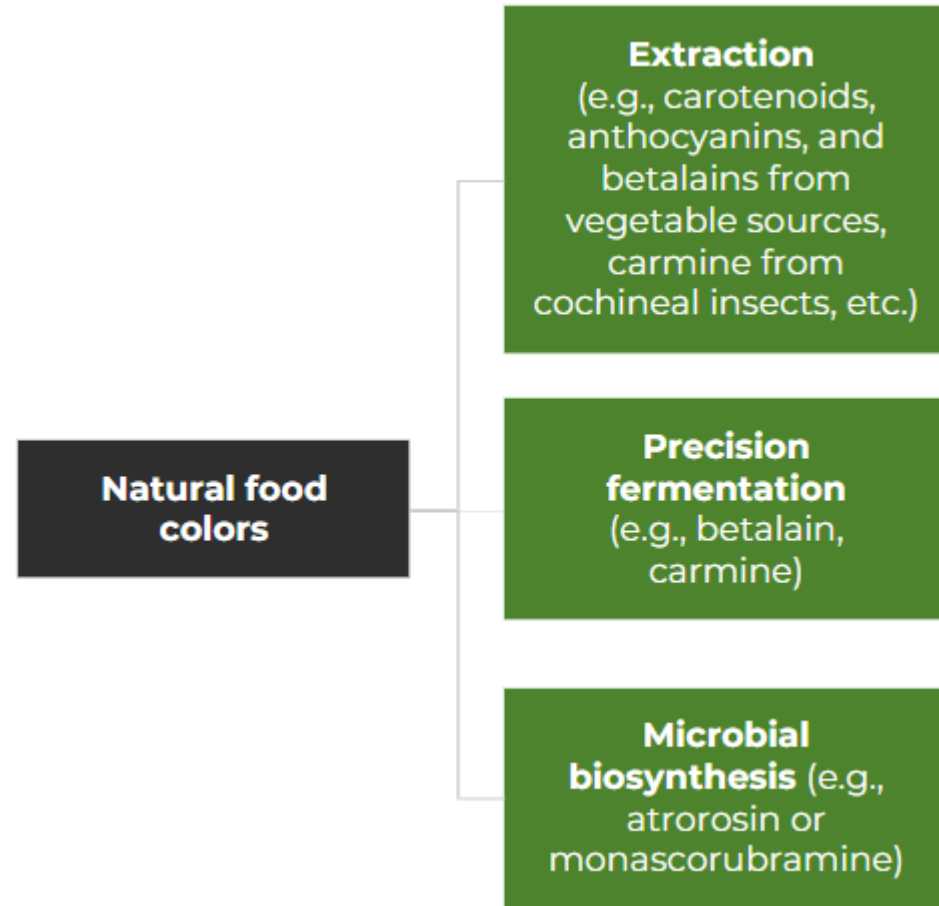
# CLEAN LABEL GETS FUNCTIONAL

- The new clean-label movement demands replacements that perform across safety, stability, and sensory quality — not just look “natural.”
- This makes colorants one of the most technically demanding and innovation-active categories to reformulate.



# NATURAL FOOD COLORS

- Extraction from natural sources offers a near-term innovation opportunity.
- Synbio routes are gaining momentum as a high-performing alternative.






















# FOOD COLORS

- Innovation is driven by corporates, with startups gaining momentum.
- Synthetic food colors offered by leading corporates like Givaudan and International Flavors & Fragrances still take the front seat, with growing diversification into natural colors.

## KEY PLAYERS FOOD ADDITIVES

### 1 COLORS

 Givaudan <sup>®</sup> ENGAGING THE SENSES	 SENSIENT	 FIRMENICH	 DDW The Color House	 GNT
 ADM	 NATUREX	 Phylolab	 michroma	 CHROMOLOGICS
 PROVECTUS ALGAE	 Lycored Cultivating wellness.™	 Debut	 CONAGEN <sup>™</sup> MAKING IMPOSSIBLE POSSIBLE	 Seprify MATERIALS
 PLANTO PIA	 EXBERRY	 kalsec	 ROHA	



# CASE STUDY

## Rich Products' CVC arm invests in Phytolon

Aside from the strategic investment from its corporate venture capital (CVC) arm, Rich Products will also evaluate the downstream functionality and applicability of Phytolon's colors in icings, toppings, and baked goods.

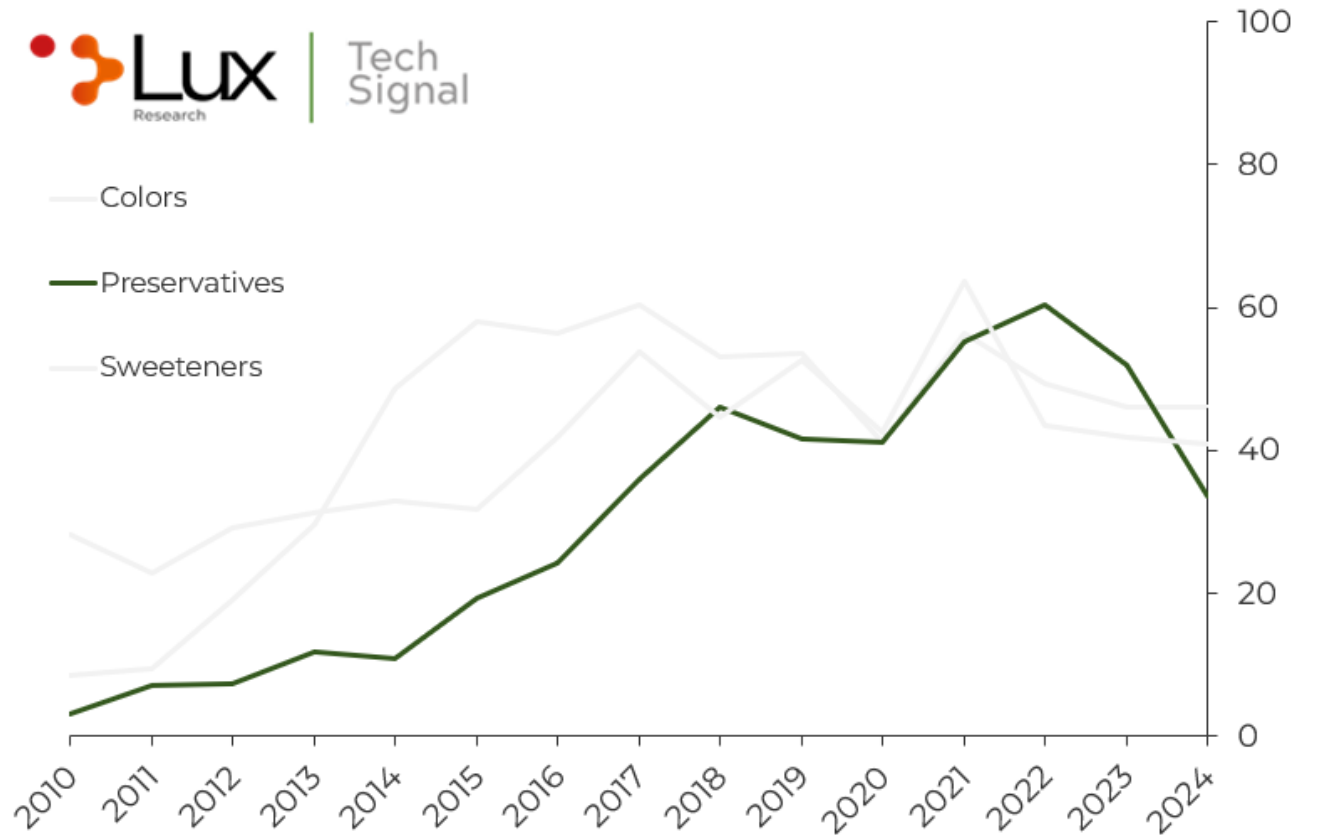
### LUX TAKE

CPG and ingredients clients should already be diversifying their portfolios of food colorants beyond synthetic additives to keep up with rapidly evolving regulatory pressures and consumer demands.



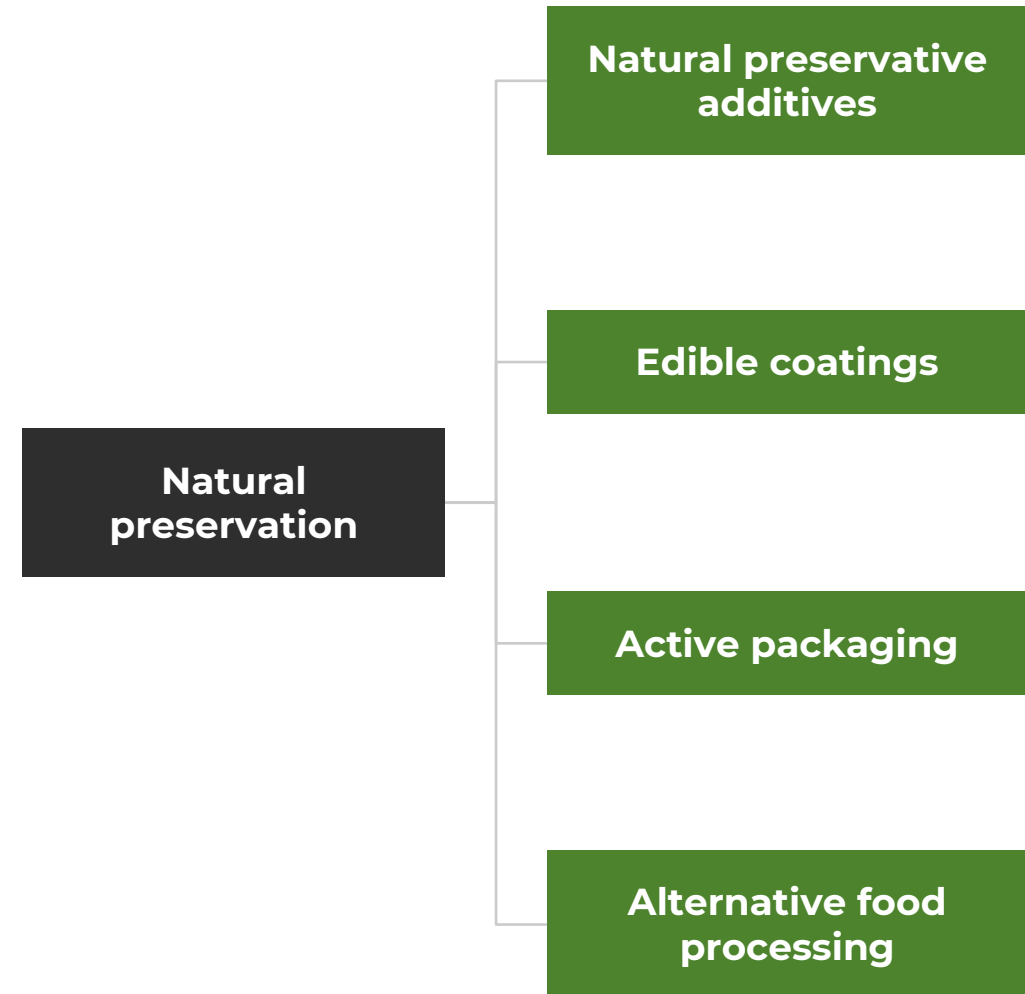
# GRAS & SAFETY RESET THE SHELF- LIFE GAME

- GRAS self-affirmation is under pressure, and FDA slowdowns create uncertainty around legacy safety assumptions.
- Preservatives sit at the center of this shift, facing both regulatory retreat and the burden of functional proof.



# NATURAL FOOD PRESERVATION

- Moving away from synthetic additives is creating market traction for alternative solutions.
- While alternative processing suffers from being a resource-intensive solution, edible coatings and active packaging offer viable but niche solutions.



# PRESERVATIVES

- The desire to move away from chemical preservatives has led to increasing research into biopreservatives as an alternative solution.

## PRESERVATIVES

 Wait and See				
				
				
				
				



# CASE STUDY

## Corbion launches natural mold inhibitor

- Corbion launched Verdad Essence WH100, a natural cultured-wheat-based mold inhibitor for baked goods that supports clean-label formulations without compromising taste or texture.
- Its mold-inhibition predictive model incorporates real-world data from over 80 challenge studies.

### LUX TAKE

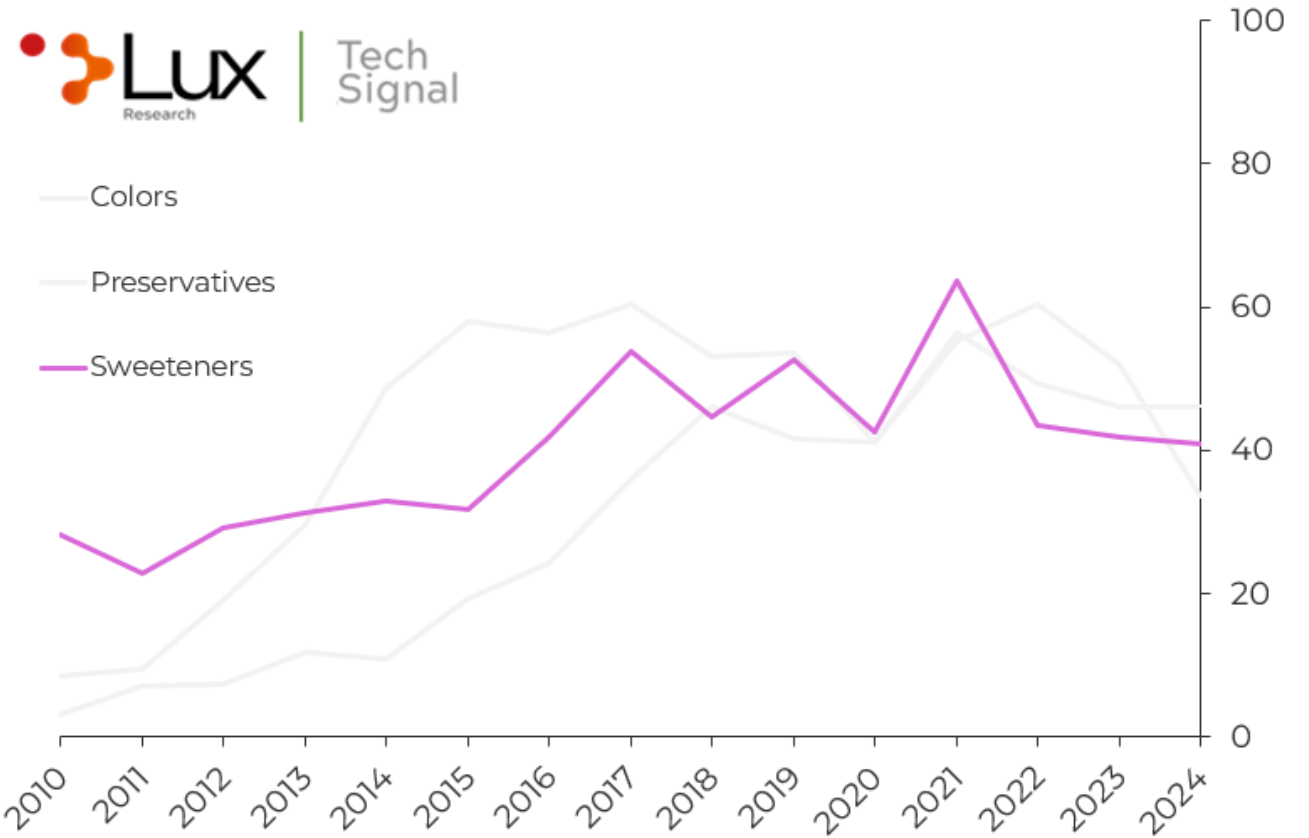
Clients should look to implement other microbial spoilage-control innovations that combine clean-label functionality with predictive modeling.





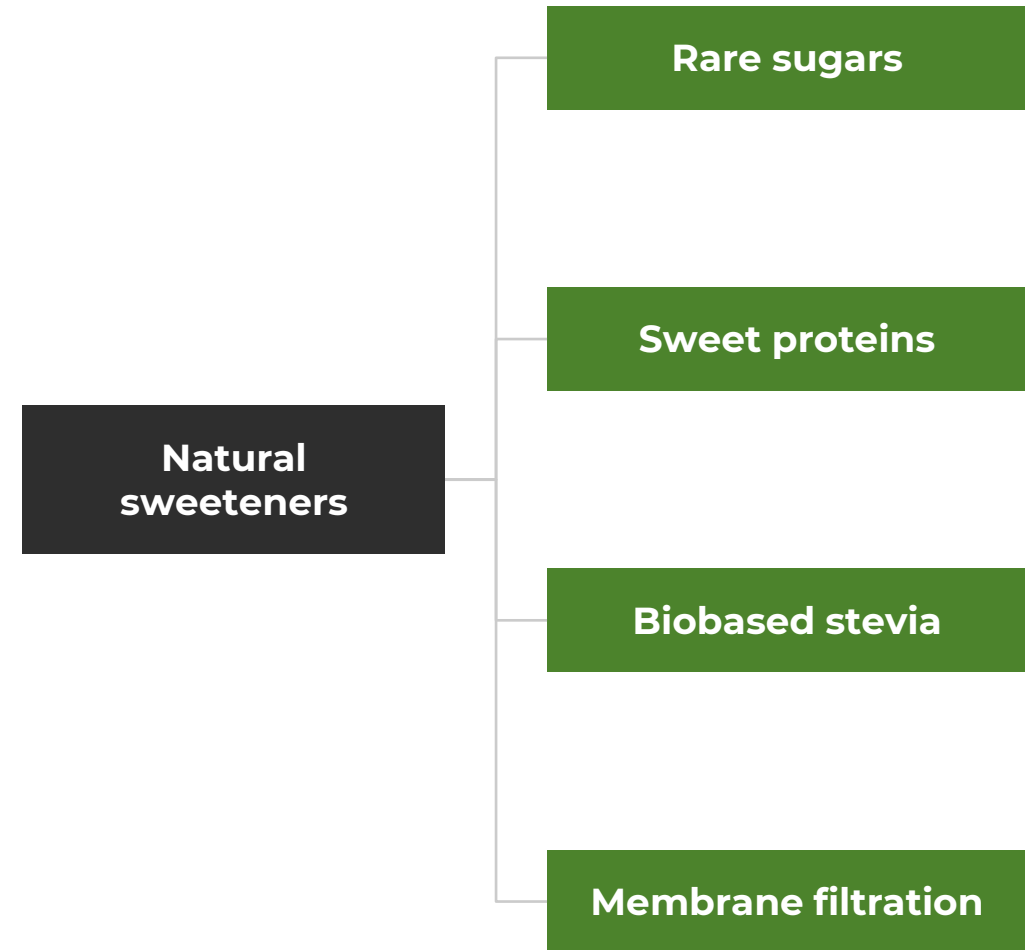
# SUGAR REDUCTION IS A STRUCTURING CHALLENGE

- Sugar isn't just a sweetness issue — it also shapes texture, labeling, and metabolic response, especially under frameworks like MAHA.
- That is why sweeteners are no longer a single-ingredient decision but a systems-level design challenge.



# NATURAL SWEETENERS

- Of the emerging sugar-reduction technologies, allulose from the rare-sugar category presents the most closely matched functionality and tastes like sucrose.
- In the long term, sweet protein flavors and designer proteins look promising, although they would require regulatory approvals.



# SWEETENERS

Sugar-reduction technologies —such as rare sugars, sweet proteins, and membrane filtration — address MAHA policy goals by supporting reduced sugar intake to lower chronic disease risk. CPGs are developing ingredient solutions that aim to maintain product functionality while meeting reformulation needs.



1

## RARE SUGARS

From top to bottom: Corporates, SMEs, research institutes



3

## PHYSICAL MODIFICATION

From top to bottom: Corporates, SMEs, research institutes



5

## MOGROSIDE

From top to bottom: Corporates, SMEs, research institutes



2

## SWEET PROTEINS

From top to bottom: Corporates, SMEs, research institutes



4

## MEMBRANE FILTRATION

From top to bottom: Corporates, SMEs, research institutes



6

## STEVIOL GLYCOSIDES

From top to bottom: Corporates, SMEs, research institutes



# CASE STUDY

## Ingredion's partnership with Oobli set to introduce blended sweet protein ingredients

Shortly after Oobli received GRAS approvals from the FDA for its precision-fermentation-derived brazzein and monellin, Ingredion began codeveloping better-for-you sweetener blends, combining these proteins with its existing stevia solutions and fibers.

### LUX TAKE

Food and beverage clients should evaluate solutions that address common issues with intense sweeteners, such as aftertaste and need for bulking agents.



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# 3. OPPORTUNITIES AND OUTLOOK FOR THE NEXT ERA OF INGREDIENTS



# FUTURE INGREDIENTS ROADMAP

- Ingredient innovation is no longer just a technical challenge — it's increasingly a regulatory one.
- Policy shifts are not only dictating reformulation priorities but also influencing which technologies gain market traction and where. Understanding this dynamic is critical to scaling innovation across markets.

	U.S.	EU	APAC
Colors	In transition (state-led bans emerging)	High restriction (e.g., titanium dioxide)	In transition (Singapore stricter, others lax)
Preservatives	In transition (FDA slowdowns)	High restriction (formaldehyde, nitrates)	In transition (India permissive, Japan strict)
Sweeteners	In transition (MAHA policy)	In transition (aspartame warnings)	Low restriction (low reform pressure)

# KEY TAKEAWAYS

1

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**Ingredient innovation now operates in a fractured global regulatory landscape, with the U.S. rapidly shifting from permissive to restrictive.**

2

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**To stay competitive, brands must rethink formulation strategies across color, preservation, and sweetness — aligning with new functional, regulatory, and nutritional demands.**

3

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**Winning in this environment requires region-specific innovation playbooks that balance risk, readiness, and reformulation capacity.**



# THANK YOU

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