EZASSI SIGNALS

Natural Food Colors

Commercial Signals · October 2026

Seven signals from a Commercial watch on the U.S. move from synthetic dyes to natural colors: supply, approvals, deadlines and prices. Each signal rests on two or more dated events and carries a confidence band, a time horizon and a verification status. Implications are written for formulators, ingredient suppliers and contract manufacturers.

#	SIGNAL	CONFIDENCE	HORIZON	STATUS
1	FDA's indefinite delay of beetroot red and spirulina extract approvals removes two newly authorized natural colors from formulators' near-term toolkit	High	Short-term 3–12 months	Verified
2	Sensient's $250 million U.S. manufacturing program and ADM's Northern Kentucky expansion represent the largest confirmed domestic natural-color capacity additions of the reformulation cycle — but neither has disclosed which specific color sources benefit	Medium	Short-term 3–12 months	Verified
3	Precision-fermented food colors have secured manufacturing partnerships and financing but remain below the regulatory and commercial threshold needed for procurable U.S. supply in 2026–2027	Medium	Short-term 3–12 months	Verified
4	The Red No. 3 federal deadline of January 15, 2027 and the Orange B revocation effective September 8, 2026 are compressing the reformulation window, while California's AB 418 adds a parallel state-level driver for the same period	High	Immediate 0–3 months	Review
5	Dated private-label and institutional deadlines from Walmart, Save A Lot, General Mills, and the American Bakers Association confirm that natural color demand for 2026–2027 is real and partially operational — not merely pledged	Medium	Immediate 0–3 months	Review
6	Near-total U.S. import dependency for annatto and butterfly pea creates a structural supply vulnerability as modeled demand for those colors could rise several-fold under reformulation pressure	Medium	Short-term 3–12 months	Review
7	Blue color approval pipeline has expanded materially since May 2025 — with Galdieria, butterfly pea, and gardenia genipin now authorized — but additional petitions under review and a Gardenia Blue expanded-use petition point to continued category development that will shape blue formulation options into 2027	Medium	Short-term 3–12 months	Verified

Confidence bands: High, Medium, Low. Most signals land in Medium, where the other side could still be argued. Status shows the weakest verification tag across a signal's facts.

SIGNAL 1 OF 7

FDA's indefinite delay of beetroot red and spirulina extract approvals removes two newly authorized natural colors from formulators' near-term toolkit

HIGH | Short-term (3-12 months) | Standards | Regulatory & Market Access | Verified

FDA issued final orders on February 6, 2026 approving beetroot red (Phytolon) and expanded spirulina extract (GNT) uses, then delayed both effective dates indefinitely on March 20–24, 2026 after objections — meaning those expanded authorizations cannot yet be used commercially, precisely as reformulation pressure peaks.

REASONING

This signal rests on primary Federal Register filings and FDA's own regulatory-status database — the most authoritative possible sources for this watch. Two simultaneous indefinite delays at the moment of peak reformulation demand is not a coincidence of bureaucratic timing; it is a structural gap between announced regulatory progress and actual commercial availability. The beetroot red delay is particularly significant because it affects Phytolon, a fermentation-derived color company that just closed a Series B and has an industrial-scale manufacturing agreement in place — the regulatory block therefore also delays the first U.S. commercial fermentation-derived color entry. Confidence is High; the one open question is when FDA will resolve the objections.

PATTERN

FDA issued final orders on February 6, 2026 approving beetroot red for human foods and expanding spirulina extract uses. FDA's regulatory-status entry confirms beetroot red is permanently listed but records the effective-date delay. The Federal Register documents show indefinite delays effective March 20–24, 2026, triggered by objections and hearing requests. The FDA final-orders database names Phytolon Ltd. as petitioner for beetroot red and GNT USA LLC for spirulina. A Japanese foodtech report confirms the effective date was postponed indefinitely on March 20, 2026. A trade source corroborates the delay and FDA's statement that safety determinations were unchanged.

IMPLICATION

Formulators who planned product launches around expanded beetroot red or spirulina extract uses cannot treat those approvals as operative regulatory clearance. Any product specification, 'no artificial colors' claim, or launch schedule built on the February 2026 orders must be put on hold or reformulated around currently effective authorizations. For Phytolon, the delay also holds back its first commercial fermentation-derived color in the U.S. market regardless of its manufacturing readiness or Series B financing.

RECOMMENDED ACTION

Monitor the FDA color-additive final-orders database weekly for any notice resolving the Phytolon and GNT objections and setting effective dates; do not include expanded beetroot red or spirulina extract uses in any formulation specification or launch plan until the effective date is confirmed in the Federal Register.

SOURCES & WHAT THEY SIGNAL

- **Federal Register — Beetroot Red Effective-Date Delay, March 24, 2026** Primary source confirming FDA's indefinite delay of the beetroot red final order effective date following objections.
- **FDA Final Rules and Final Orders Database — Beetroot Red and Spirulina Petitioners** Identifies Phytolon Ltd. as beetroot red petitioner and GNT USA LLC as spirulina petitioner, linking the delay to named commercial parties.

- **Foovo / Foodtech Japan — Phytolon Effective Date Postponed** Corroborates the indefinite postponement of the effective date and links the delay directly to Phytolon's commercialization timeline.
- **Federal Register — Spirulina Extract Effective-Date Delay, March 24, 2026** Primary source confirming FDA's indefinite delay of the expanded spirulina extract final order effective date.
- **FDA Regulatory Status — Beetroot Red** Confirms beetroot red is permanently listed but records the effective-date delay from the March 24, 2026 final order.
- **Food Dive — FDA Delays Approval of Natural Dyes** Trade corroboration of the delay and FDA's statement that safety determinations were not changed by the objections.

SIGNAL 2 OF 7

Sensient's $250 million U.S. manufacturing program and ADM's Northern Kentucky expansion represent the largest confirmed domestic natural-color capacity additions of the reformulation cycle — but neither has disclosed which specific color sources benefit

MEDIUM | Short-term (3-12 months) | Supply & Production Readiness | Capital & Corporate Activity | Verified

Two of the largest U.S. ingredient companies have announced concrete, named capital investments in domestic natural-color production since early 2026, signaling supplier confidence that reformulation demand is durable — but the absence of color-specific capacity data prevents formulators from confirming supply for any particular botanical input.

REASONING

Sensient's announcement is sourced from the company's own press release and website, making it among the most reliable evidence types available. The groundbreaking is a physical, dated event rather than a pledge. ADM's investment is reported by trade press rather than a primary ADM filing, which reduces confidence slightly. Taken together, the two investments show incumbent color suppliers are committing fixed capital to U.S. domestic capacity — a different signal from a marketing announcement. However, neither company disclosed which color sources (beet, carrot, spirulina, anthocyanin, annatto, turmeric, paprika, gardenia, butterfly pea, safflower) are receiving the additional processing capacity, which means formulators cannot use these investments to resolve specific supply questions.

PATTERN

Sensient broke ground on an expansion of its St. Louis, Missouri, facility adding almost 29,000 square feet to a facility already exceeding 500,000 square feet, with the new space dedicated to natural-color processing. Sensient stated that the broader Central Manufacturing Network program involves up to $250 million in investments to increase natural-color production capacity across U.S., Canadian, Mexican, Peruvian, Italian, German, and Turkish facilities. ADM reportedly invested more than $16 million to expand naturally derived color production in Northern Kentucky, adding approximately 14,000 square feet of manufacturing space, following a reported preceding investment in a neighboring facility. A separate market-research summary describes an ADM investment in the Erlanger, Kentucky, facility involving automation, digitalization, and process upgrades.

IMPLICATION

The two investments confirm that incumbent suppliers are positioning for sustained reformulation demand and are building U.S. domestic capacity rather than relying solely on imports. For formulators seeking supply assurance, however, neither investment resolves the question of which specific botanical colors will have expanded availability or when new capacity will be commissioned. The opaqueness about color-specific capacity allocation is itself a risk signal: if a color category is underserved by these expansions, the gap will only become visible once demand materializes against constrained supply.

RECOMMENDED ACTION

Directly ask Sensient and ADM account managers which specific color products or botanical inputs are allocated to the new capacity, request commissioning timelines, and request allocation terms for 2026–2027 contracts before the Red No. 3 January 2027 compliance deadline creates competitive demand for the same capacity.

SOURCES & WHAT THEY SIGNAL

- **Sensient Food Colors — Breaking Ground on St. Louis Expansion** Company-sourced announcement of the physical groundbreaking and square footage addition to the St. Louis facility.
- **DataM Intelligence — U.S. Natural Food Colors Market** Market research summary describing an ADM Erlanger, Kentucky, facility investment including automation and digitalization upgrades.
- **PR Newswire — Sensient Scales Up Natural Color Production** States the $250 million Central Manufacturing Network program investment figure and its purpose.
- **Sensient Food Colors — North America Expansion News** Corroborates St. Louis facility details and global manufacturing network scope.
- **Food and Drink Technology — ADM Northern Kentucky Investment** Trade press source reporting the ADM more than $16 million Northern Kentucky expansion and 14,000 square foot addition.

SIGNAL 3 OF 7

Precision-fermented food colors have secured manufacturing partnerships and financing but remain below the regulatory and commercial threshold needed for procurable U.S. supply in 2026–2027

MEDIUM | Short-term (3-12 months) | Supply & Production Readiness | Capital & Corporate Activity | Standards | Regulatory & Market Access | Verified

At least four fermentation-derived color companies — Phytolon, Michroma, Chromologics, and Debut — have announced scale-up partnerships or funding, but none has confirmed FDA authorization and commercially available U.S. supply simultaneously, leaving a gap between manufacturing intent and formulable ingredient.

REASONING

Multiple independent sources across companies and deal types converge on the same pattern: financing and partnerships are moving, but the critical gate of FDA authorization combined with commercial-scale output has not been cleared by any fermentation-derived color except Galdieria extract blue, which was approved May 2025 and for which Fermentalg's 100-ton/year production target with HuvePharma is the only capacity figure found. Phytolon's approval exists in principle but its effective date is indefinitely delayed. Michroma is still filing a petition as of March 2026. Chromologics and Debut-Oterra are pre-approval. The evidence from Future Market Insights directly states that commercial availability depends on regulatory authorization and customer application testing — not just manufacturing capacity. Confidence is Medium rather than High because the Galdieria pathway is further along than others, and because the underlying manufacturing partnerships are real even if the U.S. supply path is blocked.

PATTERN

Phytolon closed a $23.6 million Series B to commercialize beetroot red after the FDA ruling, has an industrial-scale manufacturing agreement in place, and works with Ginkgo Bioworks for U.S. scale-up — but the effective date of its FDA approval remains indefinitely delayed. Michroma partnered with CJ CheilJedang for commercial-scale production and was filing an FDA color additive petition as of March 2026. Chromologics raised funding for FDA and EFSA submissions for its Natu.Red product. Debut and Oterra announced a partnership to develop and scale a precision-fermentation Red 40 alternative, with FDA approval still being sought. Fermentalg states its HuvePharma partnership provides access to approximately 10,000 cubic meters of fermentation capacity, with a 100-ton-per-year production target for Everzure Galdieria and industrial production reportedly beginning in 2024. FDA approved Galdieria extract blue in May 2025. A market analysis states directly that commercial availability depends on regulatory authorization and customer application testing for each finished color.

IMPLICATION

For formulators facing 2026–2027 deadlines, fermentation-derived colors are not yet a reliable supply alternative except potentially for Galdieria blue, where the approval is older and a stated industrial production target exists. The wave of financing and partnerships will matter in 2027–2028 if regulatory timelines accelerate, but relying on any of the other fermentation colors before confirmed FDA authorization and verified production availability would be speculative. The Debut-Oterra Red 40 alternative is the most consequential for volume reformulation — its pre-petition status means it should not enter any 2026–2027 formulation plan.

RECOMMENDED ACTION

Track Phytolon's FDA effective-date resolution as the leading indicator for the fermentation color class; separately, request supply availability and application data from Fermentalg for Galdieria extract blue, the only fermentation-derived color with both an older U.S. approval and a stated industrial production target.

SOURCES & WHAT THEY SIGNAL

- **FoodNavigator — FDA Weighs Petitions for Natural Food Colors, August 2026** Reports FDA approval of Galdieria extract blue in May 2025, establishing it as the only fermentation-derived blue with an operative U.S. approval predating the 2026–2027 period.
- **DataM Intelligence — Fermentation-Derived Natural Food Colors Market** Reports Michroma–CJ CheilJedang partnership and Debut–Oterra Red 40 alternative development agreement.
- **Future Market Insights — Fermentation-Based Biosynthetic Food Colors Market** Directly states that commercial availability depends on regulatory authorization and customer application testing, not manufacturing partnerships alone.
- **FoodNavigator — Fermentation Ingredients Attract Investors, June 2026** Corroborates Chromologics fundraising for regulatory submissions and production scale-up for Natu.Red.
- **Fermentalg — Partnerships Page (Everzure Galdieria / HuvePharma)** States the HuvePharma partnership, approximately 10,000 cubic meter fermentation capacity, and 100-ton-per-year production target for Everzure Galdieria.
- **FoodNavigator — Fermentation Food Colors Gain Traction, March 2026** States Michroma was in the process of filing an FDA color additive petition as of March 2026 — not yet filed or approved.
- **Phytolon Series B Financing Announcement — PR Newswire** Confirms $23.6 million Series B and positions the financing around commercialization following the FDA ruling.
- **Weizmann Institute — Phytolon Case Study** States Phytolon has an industrial-scale manufacturing agreement in place and is expanding fermentation-derived ingredient capabilities.
- **Mordor Intelligence — Microbial Food Colors Market** Reports Debut–Oterra partnership and the companies' intent to seek FDA approval for a fermentation-derived Red 40 alternative.
- **Foovo / Foodtech Japan — Phytolon Effective Date Postponed** Confirms the indefinite delay of Phytolon's FDA approval effective date, blocking U.S. commercial use.
- **EIT Food — Phytolon and Ginkgo Bioworks Scale-Up** Identifies Ginkgo Bioworks as Phytolon's scale-up partner for U.S. and international production.

SIGNAL 4 OF 7

The Red No. 3 federal deadline of January 15, 2027 and the Orange B revocation effective September 8, 2026 are compressing the reformulation window, while California's AB 418 adds a parallel state-level driver for the same period

HIGH | Immediate (0-3 months) | Standards | Regulatory & Market Access | Demand & Narrative Formation | Review

Three converging hard-deadline events — Orange B already revoked, Red No. 3 food use ending January 15, 2027, and California AB 418 banning Red No. 3 in-state from January 1, 2027 — are creating simultaneous reformulation demand across multiple categories with no slack in the schedule.

REASONING

Orange B revocation and the Red No. 3 federal deadline are documented in primary FDA sources. California AB 418 is confirmed through a state-law tracker; the current injunction status of AB 418 should be verified directly against primary court records before relying on it for compliance planning. The simultaneous arrival of these three events — one already in effect, one hitting January 1, 2027 (California), one hitting January 15, 2027 (federal) — means that the reformulation demand they generate is essentially concurrent and undeferrable. Some sources cite 2028 for Red No. 3; that is FDA's separate deadline for ingested drugs (January 18, 2028). FDA's own Red No. 3 page sets the food date at January 15, 2027.

PATTERN

FDA issued a final order revoking Orange B as a color additive for frankfurter and sausage casings, effective September 8, 2026. FDA's Red No. 3 page states food authorization ends January 15, 2027, and an August 5, 2026 action denied hearing requests and removed an administrative stay. California AB 418 bans the sale of food containing Red No. 3 in California beginning January 1, 2027; the current litigation or injunction status of AB 418 could not be confirmed in public sources as of October 2026 and should be verified against primary court records. Some sources cite 2028; that is FDA's deadline for ingested drugs, not food. FDA proposed revoking Citrus Red No. 2 as well, concluding its use had been abandoned.

IMPLICATION

Any food product sold in California after January 1, 2027, or anywhere in the U.S. after January 15, 2027, that contains Red No. 3 will be out of compliance, subject to confirmation that AB 418 remains in force without injunction. Supply of replacement colors — particularly reds — needs to be contracted and qualified now, not after the deadline. The Red No. 3 deadline will compete with Walmart's January 2027 private-label reformulation target and Save A Lot's Red No. 3 deadline for the same replacement color supply. Orange B users in meat and sausage categories face an already-passed deadline.

RECOMMENDED ACTION

Plan to the January 15, 2027 federal food date for Red No. 3; confirm the current litigation and injunction status of California AB 418 against primary court records before finalizing California compliance plans; lock in contracted supply of compliant red replacements before fourth-quarter 2026 when competitive demand from multiple large retail deadlines will peak simultaneously.

SOURCES & WHAT THEY SIGNAL

- **FDA Press Announcement — Orange B and Citrus Red No. 2 Actions** Primary FDA announcement of Orange B revocation and proposal to revoke Citrus Red No. 2.
- **FDA — Orange B Revocation Notice** Provides the Orange B revocation details and the September 8, 2026 effective date.

- **FDA Color Additives Regulatory Status — Orange B** Confirms Orange B food-use delisting effective September 8, 2026 in the FDA regulatory-status database.
- **FDA — FD&C Red No. 3 Page** States FDA will no longer allow Red No. 3 in food, with the food authorization ending January 15, 2027, and the August 5, 2026 denial of hearing requests.
- **FDA Final Rules Database — Red No. 3** Identifies the August 5, 2026 action as the denial of objections and removal of the administrative stay on Red No. 3.
- **Flavorlab — California AB 418 Tracker** Confirms January 1, 2027 California effective date for Red No. 3 ban; injunction status requires verification against primary court records.

SIGNAL 5 OF 7

Dated private-label and institutional deadlines from Walmart, Save A Lot, General Mills, and the American Bakers Association confirm that natural color demand for 2026–2027 is real and partially operational — not merely pledged

MEDIUM | Immediate (0-3 months) | Demand & Narrative Formation | Supply & Production Readiness | Review

Multiple large buyers have set specific, category-identified, and institutionally tracked deadlines for removing certified synthetic colors that fall within or immediately before the 2026–2027 window, creating concrete and proximate demand pressure on natural color supply regardless of whether any individual pledge has been fully executed.

REASONING

The FDA pledge tracker is a government-maintained source that records company commitments with status labels, making it more authoritative than trade-press pledge announcements. The Walmart and General Mills findings reported by Bakery & Snacks add a private retail dimension. California and New Hampshire legislation convert some of this demand from voluntary pledges into statutory requirements. Confidence is Medium because the FDA tracker labels several key commitments 'in progress' rather than 'complete,' General Mills still had fruit snacks and baking products to convert as of September 2026, and these are pledges rather than contracted supply agreements. The collective picture is nonetheless a genuine demand signal: the deadlines are dated, named, category-specific, and institutionally tracked.

PATTERN

FDA's pledge tracker states General Mills planned to remove certified colors from all U.S. cereals and K–12 school foods by summer 2026. The same tracker states the American Bakers Association pledged to eliminate certified FD&C colors from baked goods supplied to K–12 schools through the National School Breakfast, Lunch, and Competitive Foods Programs by the beginning of the 2026–2027 school year. The tracker states Save A Lot planned Red No. 3 removal from private label by end of 2026 and all remaining certified colors by end of 2027, with status labeled 'In progress'. The tracker states Campbell's planned to stop producing food or beverages with FD&C colors by the second half of fiscal year 2026 and labels that commitment 'Complete'. A trade report states Walmart intends to remove certified colors and more than 30 other ingredients from U.S. private-label foods by January 2027, and that General Mills has transitioned 90% of its U.S. retail portfolio, with fruit snacks and baking products due by end of 2027. A California school-food law prohibits six color additives in public-school food; the specific effective date and bill designation should be confirmed against the primary legislative text before relying on them for planning purposes. New Hampshire SB 577 prohibits Red No. 3, Citrus Red No. 2, and Orange B in public school breakfast and lunch programs effective July 1, 2028.

IMPLICATION

The overlap of Walmart's January 2027 private-label deadline, Save A Lot's Red No. 3 end-of-2026 deadline, and the federal Red No. 3 January 15, 2027 authorization end creates a compressed, concurrent demand surge for replacement red colors in the fourth quarter of 2026 and first quarter of 2027. Suppliers offering compliant red, yellow, and blue colors face simultaneous large-volume demand from retail private label and institutional school channels. The part of General Mills' U.S. portfolio still to convert — fruit snacks and baking — points to exactly the categories where natural color heat, pH, and shelf-life challenges are most acute.

RECOMMENDED ACTION

Map the categories still converting (fruit snacks and baking), Walmart's January 2027 private-label deadline and Save A Lot's private-label Red No. 3 deadline against available natural red color supply — these are the highest-probability shortage or price-pressure points in the next 90 days — and request supply allocation commitments from color suppliers before year-end.

SOURCES & WHAT THEY SIGNAL

- **FDA — Tracking Food Industry Pledges to Remove Petroleum-Based Food Dyes** Government-maintained tracker recording General Mills, Save A Lot, American Bakers Association, and Campbell's deadlines with status labels.
- **Bakery and Snacks — U.S. Food Dye Phase-Out Puts Natural Color Supply Chain Under Pressure** Reports Walmart's January 2027 private-label deadline and General Mills' 90% portfolio transition, with fruit snacks and baking still to convert.
- **National Agricultural Law Center — Food Law in the States 2026 Update Part 2** Confirms New Hampshire SB 577 signed and effective July 1, 2028 for school meal programs, covering Red No. 3, Citrus Red No. 2, and Orange B.
- **Food Dive — California's Food Safety Overhaul** Documents California school-food prohibition on six synthetic color additives; specific effective date and bill designation require verification against primary legislative source.

SIGNAL 6 OF 7

Near-total U.S. import dependency for annatto and butterfly pea creates a structural supply vulnerability as modeled demand for those colors could rise several-fold under reformulation pressure

MEDIUM | Short-term (3-12 months) | Supply & Production Readiness | Pricing & Commoditization | Review

Industry estimates citing National Confectioners Association data indicate the U.S. imports nearly all of its annatto and butterfly pea supply, while industry participants estimate a full transition could raise demand for non-FD&C colorants by 400–500%, creating import-concentration risk that domestic capacity expansions do not yet address.

REASONING

The import-dependency figures and demand-multiplier estimates come from a single trade-press article citing NCA data and modeled scenarios — not from primary NCA filings, USDA import statistics, or verified crop data. The findings explicitly note these are modeled estimates, not confirmed shortages or price increases. Confidence is therefore Medium: the figures are specific enough to be analytically meaningful and cite a named industry association, but the source is secondary trade press and no shortage or price spike has been verified. The signal is genuine because the structural logic — near-total import dependence plus a demand multiplier driven by regulatory deadlines — is coherent and testable, and the specific percentages (98.2% annatto, 99.1% butterfly pea) carry enough apparent precision to warrant investigation even if they require primary-source verification.

PATTERN

A trade report cites National Confectioners Association estimates that the U.S. is dependent on imports for 98.2% of annatto and 99.1% of butterfly pea. The same report states that modeled additional imports for the colorants studied could rise from 34 tonnes in a baseline scenario to 366 tonnes under accelerated demand and 733 tonnes under a fourfold-demand scenario. Separately, industry participants estimate that a full transition could raise demand for non-FD&C colorants by 400–500%. FDA approved butterfly pea flower extract in May 2025, making it an authorized color option at the moment when import dependency for that botanical is reported to be near-total. The Sensient and ADM U.S. capacity expansions do not specify which botanical inputs they process, leaving the question of domestic butterfly pea and annatto processing capacity unresolved.

IMPLICATION

If reformulation deadlines force large-scale rapid uptake of butterfly pea or annatto — two colors with near-total import dependency — any disruption to producing-country supply chains (weather, export restrictions, crop disease) would immediately translate into U.S. price spikes or allocation. The gardenia blue and Galdieria approvals reduce but do not eliminate the dependence on imported butterfly pea for blue applications. Formulators and ingredient buyers should treat annatto and butterfly pea as import-concentrated single-source risks and develop contingency color systems now.

RECOMMENDED ACTION

Obtain primary import data from USDA or U.S. Census Bureau trade statistics for annatto seed, bixin/norbixin extracts, and butterfly pea flower extract to verify the NCA-attributed figures; if confirmed, qualify at least one alternative color system that does not depend on the same import channels before year-end 2026.

SOURCES & WHAT THEY SIGNAL

- **Sensient Food Colors — Breaking Ground on St. Louis Expansion** Capacity expansion announcement that does not specify which botanical inputs are covered, leaving annatto and butterfly pea processing gaps unaddressed by this investment.

- **PR Newswire — Sensient Scales Up Natural Color Production** States $250 million investment program without specifying which color inputs benefit, reinforcing the gap in color-specific capacity visibility.
- **FoodNavigator — FDA Weighs Petitions for Natural Food Colors, August 2026** Reports FDA approval of butterfly pea flower extract in May 2025, establishing it as an authorized color option at the moment when import dependence for that botanical is reported to be near-total.
- **Bakery and Snacks — U.S. Food Dye Phase-Out Puts Natural Color Supply Chain Under Pressure** Cites NCA estimates for near-total U.S. import dependency on annatto and butterfly pea, modeled import scenarios, and an industry estimate of 400–500% demand growth.
- **Food and Drink Technology — ADM Northern Kentucky Investment** ADM expansion announcement also silent on specific botanical inputs, underscoring that neither major incumbent investment resolves annatto or butterfly pea supply questions.

SIGNAL 7 OF 7

Blue color approval pipeline has expanded materially since May 2025 — with Galdieria, butterfly pea, and gardenia genipin now authorized — but additional petitions under review and a Gardenia Blue expanded-use petition point to continued category development that will shape blue formulation options into 2027

MEDIUM | Short-term (3-12 months) | Standards | Regulatory & Market Access | Supply & Production Readiness | Verified

FDA has approved three natural blue color options since May 2025, making blue the most actively developed natural color category; a pending Gardenia Blue Interest Group petition seeking expanded category access and three unnamed petitions under review suggest the approval pipeline will continue to reshape blue formulation choices in 2026–2027.

REASONING

The approved blues — butterfly pea flower extract, Galdieria extract blue and gardenia genipin blue — are reported by a named trade source citing FDA actions. The Gardenia Blue Interest Group petition with its specific proposed category list (carbonated drinks, cereals, powdered beverages, chewing gum, ice cream, yogurt, snack foods, fruit preparations) is a concrete filing that names the categories where formulators currently cannot use gardenia blue and where that may change. Confidence is Medium rather than High because the source is trade press rather than primary FDA Federal Register notices for all three approvals, the three petitions currently under review are unnamed, and no expected decision dates are available. The signal is real: blue has historically been the hardest natural color to source, and the concentration of approvals here is a material category development.

PATTERN

FDA approved butterfly pea flower extract and Galdieria extract blue in May 2025 (alongside calcium phosphate, a white), and approved gardenia genipin blue in July 2025. FDA is currently considering three additional petitions involving expanded use, selection, or production of natural food colors including blue and yellow options. The Gardenia Blue Interest Group filed a petition to expand gardenia blue's permitted uses into carbonated drinks, powdered beverages, cereals, chewing gum, instant iced tea, ice cream and frozen desserts, yogurt, snack foods, and fruit preparations and toppings. Fermentalg states a 100-ton-per-year production target for its Everzure Galdieria blue with industrial production reportedly beginning in 2024. FDA's own consumer page identifies calcium phosphate, Galdieria extract blue, gardenia blue, butterfly pea flower extract, and beetroot red as natural color additives it has approved for manufacturers.

IMPLICATION

Blue is the synthetic dye category hardest to replace at scale (Blue 1, Blue 2 appear in the California school-food prohibition list and many category reformulations). The rapid succession of three blue approvals since May 2025 directly addresses that bottleneck. However, the Gardenia Blue petition for expanded category access signals that current approved uses are insufficient for all intended applications — formulators in carbonated beverages, cereals, and snacks may not yet have a compliant gardenia blue option. The three unnamed petitions under review represent additional potential supply options whose category coverage and timing are currently opaque.

RECOMMENDED ACTION

File a Freedom of Information Act request or monitor the FDA color-additive petition docket for the identity of the three unnamed petitions under review and their proposed uses; simultaneously request application-specific

performance data from suppliers of Galdieria extract blue and butterfly pea flower extract for carbonated beverages and cereal — the two highest-volume blue categories lacking full approval coverage.

SOURCES & WHAT THEY SIGNAL

- **FoodNavigator — FDA Weighs Petitions for Natural Food Colors, August 2026** Reports the May and July 2025 approvals (three blues plus calcium phosphate, a white), the three petitions under review, and the Gardenia Blue Interest Group petition with its proposed category list.
- **Fermentalg — Partnerships Page (Everzure Galdieria / HuvePharma)** States industrial production of Galdieria blue began in 2024 and gives a 100-ton-per-year production target, making it the only fermentation-derived blue with both an older approval and a stated industrial capacity figure.
- **FDA — Tracking Food Industry Pledges to Remove Petroleum-Based Food Dyes** FDA's consumer page identifies the approved natural color alternatives including Galdieria extract blue, gardenia blue, butterfly pea flower extract, and calcium phosphate as options FDA has authorized.

EZASSI SIGNALS

Point a signal at your own ingredients and deadlines

Ezassi Signals keeps watching the companies, technologies and regulations that could change your plans, and tells you what moved, how strong the evidence is, and what to do.

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