

Cannabinoid Procurement Guide



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EXECUTIVE SUMMARY

Executive Summary

Sourcing cannabinoids is complex. Production methods vary widely, quality systems are inconsistent, regulatory interpretations shift, and supplier maturity ranges from highly sophisticated to minimal. This guide helps procurement, R&D, quality, and brand teams make informed sourcing decisions that support product performance, consumer safety, and long-term supply-chain stability.

What This Guide Covers

This document outlines:

- The major production methods used for cannabinoids
- How to evaluate suppliers with a practical, method-agnostic framework
- Misconceptions that commonly mislead buyers
- How to read and verify COAs with confidence
- Questions that reveal true supplier maturity
- How to assess consistency, impurities, traceability, and batch history
- How to select the most practical production route for each cannabinoid
- What documentation to request and how to interpret it
- Red and green flags that indicate supplier reliability
- Best practices for intake testing and verification

A full procurement checklist summarizes all key requirements in one place.

Why It Matters

Strong procurement practices reduce:

- Batch failures and ingredient variability
- Inconsistent product performance
- Costly reformulations and supply-chain delays
- Downstream manufacturing issues
- Consumer dissatisfaction and brand risk

Teams that understand production methods, testing limitations, and real-world supplier variability can make faster, safer, more defensible sourcing decisions.

How to Use This Guide

If you are new to cannabinoids: Start with the production-methods overview to understand how cannabinoids are made and why that affects purity, scale, and consistency.

If you work in procurement or quality: Use the COA section, supplier questions, and checklist to evaluate vendors.

If you work in formulation: Focus on impurity profiles, crystallinity, solubility, sensory impact, and batch-to-batch reproducibility.

If you are a brand or product owner: Review how production method, supplier maturity, and documentation practices directly influence brand reputation and consumer trust.

Key Takeaways

- No single production method is “best.” Practicality depends on molecule, purity needs, regulatory constraints, and commercial scale.
- One COA is only a snapshot. Verification, retesting, and historical data matter.
- Misconceptions in the cannabinoid space lead to preventable sourcing errors.
- Strong suppliers demonstrate transparency, traceability, reproducibility, and openness to technical questions.
- Disciplined procurement protects both product integrity and brand credibility.



SCIENTIFIC & TECHNICAL REVIEWERS

Scientific & Technical Reviewers

This guide was prepared by BayMedica and reviewed by internal subject-matter experts and an external cannabinoid scientist. The reviewers below have validated the scientific accuracy, quality principles, and procurement frameworks included in this document.

Shane Johnson, MD

Co-Founder & Chief Scientific Officer, BayMedica

Dr. Johnson is a physician-scientist and biotech innovator with extensive experience in cannabinoid science, clinical development, and translational research. He holds a BS in Neuroscience from Brown University and an MD from Stanford University. His work bridges pharmaceutical-grade methodology with next-generation cannabinoid production, ensuring safety, consistency, and scientific rigor across BayMedica's ingredient portfolio.

Jaime Cacheiro

Chief Operating Officer, BayMedica

Jaime brings deep experience in large-scale operations, quality systems, and compliant manufacturing across pharmaceuticals and cannabis. Before BayMedica, he served as COO of KZen California, a cannabinoid beverage company, overseeing production and market growth. He previously spent 15 years at Pfizer in operational and leadership roles, developing expertise in GMP standards, supply chain efficiency, and audit-ready quality frameworks. His operational background provides a rigorous, real-world lens for evaluating cannabinoid production and supplier quality.

Anthony Ferrari, PhD

Cannabinoid Scientist & Founder, Ferrari Phytochemistry

Dr. Ferrari is a cannabinoid scientist and phytochemistry expert with specialized experience in rare cannabinoid chemistry, biosynthesis, and analytical method development. He obtained his first Investigational New Drug (IND) approval to study full-spectrum hemp extract, demonstrating his ability to translate cannabinoid science into regulated clinical pathways. Dr. Ferrari has also collaborated with several of the most well-known cannabis companies to develop cannabinoid-based products and refine impurity characterization and consistency standards. His research provides a strong scientific foundation for evaluating cannabinoid quality, safety, and manufacturing integrity.

INTRODUCTION: MARKET REALITY & PURPOSE

Introduction: Market Reality & Purpose

Sourcing cannabinoids today requires a level of rigor that many teams do not anticipate. Demand for rare, non-intoxicating cannabinoids has accelerated, yet the frameworks that guide quality, consistency, and regulatory compliance have not kept pace. The result is a market where inputs can look similar on paper but perform very differently in a finished product.

This guide was created to bring clarity to that environment. It offers a structured approach to cannabinoid procurement that supports informed, defensible decision-making. The goal is to help product developers, procurement teams, and brand leaders understand what to evaluate, what to request, and what questions to ask before bringing any cannabinoid ingredient into their supply chain.

Cannabinoids can be produced through several different methods, including chemical synthesis, biosynthesis, extraction, and hemp-derived conversions. Each method influences purity, scalability, batch-to-batch consistency, and cost. These differences become even more significant in the current regulatory environment.

As federal and state rules continue to shift, the manufacturing route behind a cannabinoid also affects the risk level of the final product. Some methods provide greater control, better documentation, and more predictable compliance outcomes than others. Not all suppliers operate with the same level of discipline or transparency. Inconsistent testing practices, limited disclosure about production methods, and the absence of rigorous quality frameworks remain common across the industry. This lack of standardization is one of the biggest challenges facing buyers today.

Regulatory interpretation introduces another layer of complexity. Differences between federal definitions, state-specific restrictions, and evolving enforcement priorities can influence how a product is classified or evaluated.

Many regulators are still developing their understanding of cannabinoid chemistry, which adds to the uncertainty. For brands operating in heavily regulated categories, even small variations in quality or documentation can lead to delays, reformulation, or downstream manufacturing issues.

These dynamics make scientific and regulatory literacy essential. Teams must understand how cannabinoids are made and what data should accompany every batch. They need to interpret COAs with confidence, verify supplier claims, and recognize red flags that may not be obvious at first glance.

They also need to look beyond the ingredient itself and assess the strength of the partner behind it. A supplier with multiple manufacturing platforms can provide a level of

long-term stability that single-route producers cannot. This platform agility helps brands maintain supply and compliance even as regulations evolve.

This guide consolidates these considerations into a single framework built on evidence, operational discipline, and quality manufacturing principles. It is designed to support practical, real-world procurement decisions and to reduce the risk that typically accompanies ingredient sourcing in this category.

By giving teams a clear and reliable foundation for evaluating inputs, this guide aims to strengthen both product performance and long-term brand integrity.



WHO THIS GUIDE IS FOR

Who This Guide Is For

Different teams engage with cannabinoids for different reasons, yet all rely on the same foundation: quality, transparency, and reliable data. This guide was designed to support the groups who most directly influence purchasing decisions, product integrity, and downstream consumer trust.

Formulators

Formulators are responsible for translating an ingredient into a functional, stable, and predictable product experience. Their focus extends beyond potency. They evaluate purity, solubility, sensory impact, and how a cannabinoid behaves when combined with other active components. For them, consistency is nonnegotiable. Even small variations in input quality can influence taste, visual appearance, aroma, and mouth feel.

Procurement managers

Procurement managers evaluate materials through the lens of specifications, supply reliability, and compliance, but cost remains a major factor in their work. Their goal is not to choose the cheapest option. Their responsibility is to secure the highest value material at the most efficient rate while protecting long-term supply stability.

Brand leads and founders

Brand leads and founders look at cannabinoids through a different lens. They care about consumer perception, positioning, and long-term trust. They want confidence that the materials entering their products are safe, consistent, and aligned with the expectations of increasingly informed consumers.

Distributors and brokers

Distributors and brokers often sit between multiple stakeholders. They need clear, accurate information they can pass along to customers, especially when questions arise about quality, compliance, or manufacturing practices. Their role depends on credibility, and the quality of the upstream supplier directly affects the strength of their customer relationships.

Each of these groups brings its own priorities and expertise. What they all share is a need for reliable inputs that perform predictably and meet the regulatory and commercial expectations of a rapidly evolving market. This guide was developed with that shared responsibility in mind.

WHY PROCUREMENT DECISIONS HAVE OUTSIZED IMPACT

Why Procurement Decisions Have Outsized Impact

Cannabinoid sourcing decisions shape far more than the cost of an ingredient. They determine the quality, safety, and reliability of the final product that reaches consumers. When inputs vary or come from suppliers without strong controls, downstream issues often surface during formulation, stability testing, or production. These setbacks are expensive. In many cases, they can impact a brand's reputation long before a product ever reaches the shelf.

Procurement teams operating in the dietary supplement, beverage, and wellness sectors already work within tight regulatory parameters. When cannabinoids are added to a formulation, those parameters become more complex. Variations in purity or trace components can change how a product behaves. Documentation inconsistencies can delay a quality review. Inadequate transparency can introduce compliance risks that are both difficult to identify and difficult to correct once a product is already in production.

The industry is still maturing, and many suppliers do not operate with established quality systems. This creates an uneven playing field where two materials that appear similar on a COA can perform very differently in a finished product. It also creates confusion for buyers who may not know which signals indicate reliability and which ones indicate elevated risk.

This guide was developed to address those gaps. It also reflects the approach BayMedica and its distribution partners bring to the market. The emphasis is on scientific integrity, transparent manufacturing practices, and dependable documentation that stands up to scrutiny. That level of discipline is not optional for brands that expect repeatable performance and consistent batch-to-batch results.

By outlining what teams should evaluate before purchasing cannabinoids, the guide aims to reduce uncertainty and strengthen decision-making. It also helps buyers understand the characteristics that set high-quality suppliers apart from the rest of the field.

Clear frameworks and rigorous vetting protect both the product and the brand. They also support a more stable and predictable supply chain, which is essential in a category where innovation is accelerating faster than regulation.

8 WAYS SOURCING CANNABINOIDS IS HARDER THAN IT LOOKS

8 Ways Sourcing Cannabinoids Is Harder Than It Looks

1. No Standardized Quality Frameworks Yet

The biggest challenge begins with inconsistency. Suppliers often use different testing panels, quality controls, and reporting practices. Some provide complete COAs with residuals and heavy metals. Others provide only potency data. These gaps create uncertainty and make it difficult for procurement teams to compare inputs on equal footing.

2. Multiple Production Methods, Many Paths to Quality

Cannabinoids can be produced through chemical synthesis, biosynthesis, extraction, or hemp-derived conversions. All four approaches are valid. All four can produce high-quality material when executed with discipline.

The challenge is not the production method itself. The challenge is understanding how that method influences purity, scalability, and consistency for the cannabinoid you need.

3. Misconceptions About “Natural” vs. “Synthetic”

Many buyers enter the category with strong preferences about plant-derived inputs or synthesized inputs. These preferences are usually based on perception, not performance. In practice, neither label tells you whether the ingredient is high quality. Quality emerges from controls, documentation, and consistency, not from the origin of the molecule.

4. One Method Cannot Serve Every Cannabinoid

Different cannabinoids behave differently during production. One method may be ideal for THCV, while another is more practical for CBG or CBC. This is why an agnostic mindset is essential. It gives teams the flexibility to choose the route that produces the most reliable, scalable, and well-documented ingredient for the specific application.

5. Batch-to-Batch Variability Across the Market

Another industry-wide challenge is variability. Many legacy suppliers and newer entrants lack mature quality systems. Their cannabinoid profiles shift from batch to batch. Impurities fluctuate. This creates formulation challenges even when a COA looks acceptable at first glance. The key is to evaluate the supplier's historical performance, not just a single test result.

6. Rapidly Shifting Regulatory Interpretation

Regulatory interpretation continues to evolve at both the federal and state levels. Guidance on Farm Bill compliance, isomer classification, and trace components can vary among jurisdictions. These shifts influence how a material is viewed during audits or reviews. Brands operating in regulated categories must verify documentation carefully and work with suppliers who understand how cannabinoid chemistry interacts with current rules.

7. Limited Visibility Into White-Label Producers and Resellers

The rise of white-label resellers, low-visibility cannabinoid producers, and brokers adds further complexity to sourcing decisions. In many cases, suppliers offer cannabinoids as intermediaries, without clear insight into who manufactured the material, where it was produced, or how it was made.

Without transparency into manufacturing controls, documentation, or production methods, buyers are forced to make high-stakes decisions with incomplete information. This lack of visibility increases risk, particularly when teams need to assess consistency, regulatory exposure, or long-term supply reliability.

8. Choosing the Right Method Requires an Agnostic, Evidence-Driven Mindset

One of the biggest challenges in cannabinoid sourcing is that no single production route works for every molecule, every product format, or every regulatory environment. What is practical for one cannabinoid may be inefficient, unstable, or difficult to scale for another.

For example, cannabinoids that occur at higher concentrations in the plant can often be sourced reliably through extraction, while rare cannabinoids that appear only in trace amounts may be more consistently produced through synthesis or conversion. In other cases, fermentation-based approaches offer advantages at commercial scale once volumes justify the process.

Teams that enter the sourcing process with fixed ideas about “plant-derived” or “synthesized” inputs often overlook options that would have delivered better purity, stronger consistency, or more reliable long-term supply.

A practical, method-agnostic approach allows procurement teams to evaluate each pathway on its technical merits. It provides the flexibility to choose the route that delivers the most stable, scalable, and well-documented ingredient for the specific cannabinoid in question. This flexibility becomes increasingly important as regulations evolve and demand patterns shift across categories.

Understanding the comparative strengths of each method, rather than relying on terminology or assumptions, is essential for navigating a marketplace that is still maturing and still developing shared standards.

MYTHS AND FACTS THAT AFFECT PROCUREMENT

Myths And Facts That Affect Procurement

Myth: Any trace amount of delta-9 THC creates a compliance issue.

Fact: Trace delta-9 THC is expected in many cannabinoids and is permitted under the 2018 Farm Bill if the material meets the hemp definition.

Myth: All states in the U.S. regulate cannabinoids the same way.

Fact: State-by-state variation is one of the largest sources of sourcing complexity. You must consult with an attorney who deeply understands the cannabis regulatory environment.



MARKET NUANCES & COMMON MISUNDERSTANDINGS

Market Nuances & Common Misunderstandings

Even experienced buyers encounter misconceptions when navigating the cannabinoid category. These misunderstandings often stem from inconsistent supplier practices, outdated assumptions, or the lack of a unified scientific framework across the industry. For procurement teams, clarity in this area is essential. Misinterpreting a technical detail can lead to unnecessary reformulation work, misplaced compliance concerns, or incorrect assumptions about product performance.

Some market beliefs persist simply because the industry is still maturing. Others arise from selective or incomplete information presented by suppliers. Understanding these nuances helps buyers differentiate between real risks and background noise, and it supports stronger decision-making across formulation, regulatory review, and supply chain planning.

Examples of Common Misunderstandings

1. “There is THC_V on the market without any D8-THC_V.”

This belief is common, but it does not reflect how THC_V is produced today. D9-THC_V can be extracted from the cannabis plant, but cultivars that contain meaningful amounts of it must be grown under a marijuana license because they also contain high levels of THC. Plant-extracted D9-THC_V, therefore, cannot move across state lines and is not sold as “hemp-derived.”

What is sold as “hemp-derived THC_V” is produced through full synthetic or semi-synthetic routes, and these processes usually generate a small amount of D8-THC_V as a byproduct. This is expected. It is not considered a safety issue when present at low levels and supported by proper documentation.

The real question is not whether D8-THC_V is present.

The real question is whether the supplier:

- Tests for it
- Discloses it clearly
- Controls it within an acceptable specification
- Provides a COA and chromatogram that reflect the true profile

Materials advertised as “THC_V with zero D8-THC_V” should be evaluated with skepticism unless the supplier can demonstrate how that profile was achieved and verified.

2. “Plant-derived cannabinoids are always safer.”

In reality, safety and quality depend on controls, documentation, and purity, not on whether the starting material is plant-based or produced by chemical synthesis or biosynthesis. A poor extraction process can create more variability than a well-controlled synthesized route.

3. “A clean COA means the material is consistent.”

A single COA only provides a moment-in-time snapshot. True consistency is demonstrated through historical performance, documented process control, and strong internal quality systems. Materials that meet specification once can shift outside specification in future batches if the underlying manufacturing process is not tightly controlled.

Because lab-to-lab variability is common in the cannabinoid space, relying on one COA can create a false sense of certainty. Buyers should strengthen verification by:

- Requesting two COAs from different laboratories when possible, or
- Testing inbound material themselves upon intake when multiple supplier-provided COAs are not available

These steps provide a clearer picture of whether the material is consistently within specification rather than simply compliant once.

4. “If it meets the Farm Bill threshold, it is automatically compliant.”

Compliance involves much more than delta-9 thresholds. Depending on the product category, buyers must consider residual solvents, heavy metals, stability, labeling requirements, and downstream regulatory classifications. The Farm Bill is only one piece of the equation.

UNDERSTANDING CANNABINOID PRODUCTION METHODS

Understanding Cannabinoid Production Methods

Cannabinoids can be produced through several established methods. All of these approaches are valid when supported by strong controls, transparent documentation, and sound manufacturing practices. The production route is not the determining factor of quality. What matters is choosing the method that is practical, scalable, and appropriate for the specific cannabinoid and its intended use.

A practical, agnostic view gives procurement teams the flexibility to evaluate each option based on performance, consistency, and commercial needs.

Chemical Synthesis

Chemical synthesis can produce cannabinoids with a high level of purity and control. At present, the cost of sourcing synthesized rare cannabinoids is significantly lower for small and medium-sized CPG brands than sourcing the same cannabinoids through more expensive routes such as extraction or biosynthesis.

This makes chemical synthesis reliable from both a technical and financial standpoint. It is also a non-plant-touching method, which supports compliance in regulatory environments that restrict plant-derived inputs.

Strengths:

- High purity
- Strong batch-to-batch consistency
- Scalable for large-volume commercial needs

When it is practical:

- The cannabinoid is rare or unavailable in meaningful quantities from the plant
- Tight specifications and reproducible outcomes are required
- Cost efficiency improves at higher volumes

Biosynthesis

Biosynthesis relies on fermentation systems that use engineered microorganisms to produce target cannabinoids. This approach is well-suited for molecules that occur only at trace levels in hemp and are difficult to extract in meaningful quantities.

It is also considered non-plant-touching, which supports compliance in regulatory environments that restrict plant-derived inputs. Biosynthesis becomes most cost-effective at high volumes, once economies of scale are reached and fermentation runs can be optimized. At those scales, it can deliver strong purity, consistent output, and reliable long-term supply for brands that require large batch sizes and predictable performance.

Strengths:

- Strong scalability once optimized
- High purity and controlled composition
- Suitable for food, beverage, and wellness formats that require large quantities

When it is practical:

- The target cannabinoid is difficult to extract from biomass
- Commercial demand requires significant production capacity
- A clean and predictable profile is needed for formulation work

Hemp-Derived Conversions

Conversions begin with plant-derived cannabinoids that are transformed into other molecules using a chemical reaction. This category varies widely across the market, which makes verification essential.

Strengths:

- Cost-effective for certain cannabinoids
- Cannabinoids that readily crystallize (e.g., CBD) support purification to very high isolate purity (99%+)
- Can support moderate scale
- Plant-based starting materials may appeal to some buy

When it is practical:

- The process is well characterized and supported by full documentation
- Purity and residual levels meet stringent specifications
- The cannabinoid is commercially viable from plant-derived precursors

Extraction

Extraction works well for cannabinoids that are naturally abundant in the plant. It is a traditional method, but it becomes less practical when dealing with rare cannabinoids that appear only in trace amounts.

Strengths:

- Effective for cannabinoids that are naturally concentrated in biomass
- Straightforward process with established techniques
- Familiar to many manufacturers and formulators

When it is practical:

- The target cannabinoid is present in high enough quantities to justify extraction
- Strong purification and QC systems are in place
- Scale aligns with biomass availability and cost

Choosing the Right Method

No single production method is inherently superior. Each one can deliver high-quality, high-purity cannabinoids when supported by the right controls and documentation.

Procurement teams should evaluate production routes based on:

- The specific molecule being sourced
- Required purity and consistency
- Forecasted scale and commercial demand
- Downstream formulation needs
- Regulatory considerations linked to the intended product category

A method-agnostic, evidence-driven approach leads to stronger sourcing decisions and more predictable finished product performance.

A Note on How CPG Brands Evaluate Ingredients

Major CPG companies already rely on ingredients that are synthesized or produced through fermentation, including caffeine, citric acid, and vanilla extract. These methods are widely used because they deliver consistent purity, predictable cost, reliable scale, and long-term supply stability.

Cannabinoids follow the same logic. The most practical production method is the one that provides the level of quality, consistency, and regulatory alignment required for the intended consumer product, regardless of whether the ingredient is synthesized, biosynthesized, or extracted.

UNDERSTANDING THE REGULATORY LANDSCAPE

Understanding the Regulatory Landscape

The regulatory environment surrounding cannabinoids continues to evolve. This creates both challenges and opportunities for product developers and procurement teams. Although the 2018 Farm Bill opened the door for hemp-derived cannabinoids, it did not create a uniform national structure for how these ingredients are evaluated, regulated, or enforced. As a result, responsible sourcing requires a clear understanding of the rules, the gray areas, and the documentation needed to navigate both.

Regulatory interpretation differs from one jurisdiction to another. Federal definitions, state laws, and enforcement priorities often shift, and not all regulators maintain the same understanding of cannabinoid chemistry. This can lead to confusion for buyers who rely on suppliers to provide accurate, compliant material.

A reliable regulatory strategy begins with transparency. Teams should work with suppliers who understand the current landscape, monitor evolving guidance, and can explain how their products align with applicable requirements.

A Note on Regulatory Interpretation

Teams should also evaluate how their regulatory interpretations align with real-world enforcement patterns. Many cannabis and hemp regulations are broad, ambiguous, or inconsistently applied. Because of this, brands sometimes “stress test” their assumptions by examining:

- How comparable products are being sold
- Whether a rule is actively enforced
- How enforcement priorities differ by state
- How legal advisors interpret the intent of the rule
- How likely the regulation is to evolve

This process does not replace legal review. It provides context that helps teams understand whether a requirement represents a clear prohibition, an ambiguous zone, or a low-priority enforcement area where similar products are already operating. This guidance does not replace legal review. We strongly advise consulting your internal compliance team and regulatory counsel regarding any questions or concerns.

Core Regulatory Considerations

Federal and State Nuances

- The 2018 Farm Bill defines hemp as cannabis and derivatives containing less than 0.3 percent delta-9 THC by dry weight.
- States may impose additional restrictions that go beyond federal guidance.
- Some states regulate all intoxicating cannabinoids, while others focus primarily on delta-9 THC content.
- Requirements can differ significantly across product categories such as supplements, foods, beverages, and cosmetics.
- Recent appropriations legislation ([Agriculture, Rural Development, FDA, and Related Agencies Appropriations Act, 2026](#)) signals that federal policy is moving toward stricter definitions of hemp-derived cannabinoids.
 - Buyers should monitor how this law may influence future enforcement and production method expectations.

BayMedica's Compliance Orientation

Although the regulatory landscape is inconsistent, BayMedica's manufacturing approach aligns with:

- Food cGMP principles
- Robust documentation practices
- Transparent traceability
- Scientific controls that support consistency and safety
- Non-intoxicating plant-derived and plant-identical ingredient standards

These measures help product developers navigate a market where formal standards are still emerging.

Why Cannabinoids Lack Formal GRAS Designation

No cannabinoids currently hold FDA-recognized GRAS status. This applies to common cannabinoids such as CBD and CBG, as well as rare cannabinoids like THCV, CBC, and CBDV.

Why GRAS Has Not Been Granted

The absence of GRAS is not due to a demonstrated lack of safety. It reflects unresolved regulatory positioning and practical constraints.

- **The FDA has not provided clear guidance** on whether cannabinoids may be lawfully marketed as food or dietary supplement ingredients. Without that clarity, companies lack a defensible pathway to justify pursuing formal GRAS review.
- **GRAS submissions are resource intensive**, requiring extensive toxicology data, historical use evidence, and expert review. Pursuing this process without regulatory certainty risks significant cost with no assurance of acceptance.
- **Most cannabinoid use today is supported by history of use and growing scientific evidence**, including preclinical research and clinical studies, rather than FDA-recognized GRAS determinations.

About Self-Affirmed GRAS

Some suppliers claim “self-affirmed GRAS,” meaning an internal expert panel has concluded a substance is safe without FDA notification.

It is important to understand that:

- Self-affirmed GRAS is **not reviewed or recognized by the FDA**
- The FDA does **not consider any cannabinoid to be GRAS**
- Self-affirmed GRAS offers **no protection against enforcement**
- Existing self-affirmed filings **lack the depth of toxicological evidence the FDA expects**, including animal studies supporting safety under intended use

What This Means for Buyers

The lack of FDA-recognized GRAS does not mean cannabinoids are unsafe. It reflects an evolving regulatory landscape and the absence of a finalized federal pathway.

Procurement teams should:

- Evaluate suppliers based on documentation, controls, and transparency, not GRAS claims
- Avoid treating GRAS as a proxy for approval or compliance
- Confirm suppliers operate under **Food cGMP-aligned quality systems**

Until federal policy evolves, **scientific rigor and manufacturing discipline remain the strongest indicators of ingredient quality.**

Why Procurement Teams Need Clarity ---

Even small regulatory misunderstandings can cause:

- Reformulation delays
- Additional stability or compliance testing
- Packaging changes
- Lost production time
- Increased costs when materials must be replaced or retested

Working with suppliers who provide complete documentation and understand how their materials fit into the regulatory environment helps reduce these risks.

A clear view of the regulatory landscape does not eliminate complexity, but it equips product developers and sourcing teams with the context they need to evaluate cannabinoid inputs responsibly.

Anecdotes and Field Examples

In practice, procurement and formulation teams frequently encounter cannabinoid suppliers who:

- **Mask D8-THCV content by reporting only a single “THCV” value** on the COA, without differentiating D9-THCV from D8-THCV. High-quality material typically contains very low D8-THCV, while poorly controlled processes can yield elevated D8-THCV levels that materially impact efficacy and performance.
- **Reliance on standard testing panels that do not reflect the full production process**, resulting in missing analyses for solvents, reagents, or intermediates actually used during manufacturing. Without explicitly requesting tests for everything involved in the production process, buyers may receive COAs that appear complete but fail to capture meaningful quality or compliance risks.
- **Fail to test for residual solvents or heavy metals**, particularly when those tests increase analytical cost, despite solvents being used in the production process.
- **Do not provide chromatograms**, preventing buyers from identifying unidentified or unexpected impurities outside the reported panel.
- **Reuse a COA from a high-quality batch across multiple lots**, rather than testing each production batch independently.
- **Modify COAs or chain-of-custody documentation** to make material appear compliant, including selectively omitting tests for solvents used in their process or obscuring batch-to-batch traceability.

These practices introduce hidden risk and frequently result in stalled development, reformulation, failed intake testing, or inconsistent finished product performance.

Why This Matters for Procurement

Understanding these nuances protects teams from:

Incorrect sourcing decisions

- Rejecting high-quality material due to flawed assumptions
- Accepting low-quality material supported by misleading or incomplete documentation

Regulatory and compliance exposure

- Misjudging how a material aligns with federal or state regulations
- Overlooking risks that are not obvious from a single COA

Operational and quality failures

- Finished products that are unsafe or do not perform as intended
- Recalls driven by inconsistent inputs or undisclosed impurities
- Audit failures due to inadequate documentation or verification processes

A clear grasp of the market's common misunderstandings helps procurement teams evaluate inputs with greater accuracy, reduce avoidable risk, and build stronger, more reliable supplier relationships.



STEP-BY-STEP PROCUREMENT FRAMEWORK

Step-by-Step Procurement Framework

Responsible cannabinoid sourcing requires a structured process. Even small gaps in evaluation can lead to downstream manufacturing issues, missed compliance requirements, or unexpected changes in product performance. The following framework provides a clear sequence to follow, regardless of the production method or cannabinoid type.

Use this as a reference guide whenever evaluating a new supplier, approving a new cannabinoid, or validating a batch prior to formulation work.

Step 1: Identify the Cannabinoid and Its Intended Use

Before requesting documentation or sampling material, clarify:

- The functional role of the cannabinoid in the formula
- Desired purity and concentration
- Form factor requirements, such as powder or oil
- Dosing and cost-in-use budget (this will inform price targets)
- Solubility expectations
- Sensory tolerances
- Any regulatory constraints specific to the product category
- Whether a specific manufacturing platform or production method is required to meet regulatory, supply chain, or brand positioning needs

This last point is often overlooked. Teams must determine whether plant-derived inputs, non-plant-touching materials, chemically synthesized, or even biosynthetic cannabinoids are required or preferred for regulatory and brand alignment, cost control, consumer perception, or long-term supply stability.

A clear internal brief helps suppliers respond accurately and prevents mismatches between what is needed and what is provided.

Step 2: Request a COA for the Specific Batch

A high-quality COA should include:

- Potency results for the primary cannabinoid
- Levels of isomers such as D8-THCV in THCV
- Residual solvents
- Heavy metals
- Pesticides if applicable
- Microbial testing when relevant
- Identification method (HPLC, GC, LC-MS, etc.)
- The exact batch or lot number (which should correspond to the batch number on the vessel you receive).

If any of these components are missing, it becomes harder to assess the supplier's controls. Best-in-class suppliers often provide a second COA for the same batch or encourage confirmatory testing. This helps account for known lab-to-lab variability and potential analytical errors.

Step 3: Know Exactly What to Look For in that COA

Review each data point systematically. A COA should not be scanned quickly or treated as a simple pass/fail document. It is a technical record that reveals how well a material is controlled and how reliably it will perform in your finished product.

Focus on:

Purity and potency consistency

Total cannabinoids should generally be greater than 98% unless a specific formulation calls for a different profile. Look for tight, repeatable potency ranges across batches.

Secondary cannabinoids and isomers

Confirm that secondary cannabinoids and isomers align with expectations for the production method. For example, in THCV materials, verify that D8-THCV levels are disclosed, controlled, and consistent with the manufacturing route.

Residual solvent levels in relation to both USP and state guidelines

Do not rely solely on a "Pass" or "Non-Detect" statement. Residual solvent thresholds can differ significantly between USP standards, for example, and individual state regulations.

For example, the USP limit for toluene (a common solvent) is substantially higher than the allowable threshold in certain states such as Colorado. A material may pass USP requirements while exceeding a specific state's limit.

In addition, "Non-Detect" does not mean zero. It only means the solvent level is below the laboratory's limit of detection. If a lab cannot detect below a certain ppm level, a material could appear compliant while still exceeding stricter state requirements.

Procurement teams should confirm:

- The actual ppm value reported, not just Pass/Fail
- The laboratory's limit of detection (LOD)
- Alignment between the testing threshold and the regulations in the state where the finished product will be distributed

Failure to verify this nuance can result in compliant-looking material that fails downstream state testing.

Heavy metals

Confirm testing for heavy metals that may carry over from raw materials, reagents, biomass, or manufacturing equipment.

Batch variability and performance risk

Look for shifts in impurity levels, minor cannabinoid content, or total purity that could influence sensory profile, crystallinity, solubility, or stability in formulation.

Chromatograms

Request chromatograms whenever possible. These provide visibility into unidentified or unexpected impurities that may not be listed in the standard panel. A clean summary table without chromatographic data can mask meaningful variation.

Interpreting a COA is not about passing or failing. It is about determining whether the material performs in a predictable, controllable manner and meets the safety and regulatory expectations for the intended product. Strong procurement decisions come from understanding the details behind the numbers, not just the headline results.

Step 4: Ask the Right Follow-Up Questions

A supplier's documentation tells part of the story. Their answers complete it.

These questions help buyers confirm the accuracy of the COA, the reliability of the material, and the maturity of the supplier's quality systems.

Key questions to ask suppliers

COA and Analytical Clarity

- Does the COA you provided represent the specific batch I am purchasing?
- Is a chromatogram available so I can review any impurities not listed on the panel?
- The COA shows a potency of X percent and total cannabinoids of Y percent. What accounts for the remaining percentage?
- Has this material been tested by more than one lab, or should I confirm the results through my own lab upon intake?

Step 5: Establish Return and Replacement Agreements

Before finalizing any purchase, confirm that the supplier offers a transparent and reasonable return and replacement policy. A strong agreement protects your brand, your formulation timelines, and your downstream manufacturing partners.

Key points to confirm include:

- **Does the policy provide a long enough time window for you to test inbound material at your preferred lab?** Some suppliers require returns within days of delivery, which is not realistic for teams managing third-party testing logistics.
- **What happens if the material does not meet spec upon arrival?** Clarify the exact steps the supplier will take and what documentation they require from your lab.
- **Who covers return shipping costs?** This varies widely and can indicate a supplier's confidence in their own quality systems.
- **How quickly can replacement material be supplied?** Timelines matter when brands are managing production schedules or national launches.
- **Are both a credit and a refund option available?** Lower-tier suppliers often only offer credits, which limits buyer flexibility.

A strong supplier should answer each of these questions directly and provide written documentation. Anything short of clarity at this stage increases risk once material begins flowing through your supply chain.

Step 6: Test Inbound Material

Do not rely solely on the supplier's COA. Verify the material through an independent lab whenever feasible.

Testing should confirm:

- Potency
- Purity
- Residual solvents
- Heavy metals
- Presence of unexpected compounds or contaminants (chromatograms)

Independent verification strengthens quality control and ensures alignment with regulatory expectations in the event of an audit or complaint.

What This Process Achieves

A structured procurement workflow:

- Reduces uncertainty
- Lowers the risk of reformulation
- Supports consistent product performance
- Helps teams choose suppliers based on evidence rather than marketing claims
- Reinforces the brand's commitment to consumer safety and responsible sourcing
- Ensures consumer safety

This framework becomes especially powerful when combined with a clear understanding of production methods and regulatory variations across jurisdictions.

EVALUATING SUPPLIERS BEYOND PRICE

Evaluating Suppliers Beyond Price

Price is important, but it is rarely the factor that determines whether a cannabinoid ingredient performs consistently in a finished product.

For most brands, the real cost shows up later in the form of reformulation work, production delays, quality complaints, loss of trust and revenue from once-loyal customers, and compliance issues. A supplier who looks competitive on paper may create far more operational risk than the initial quote suggests.

A stronger evaluation process considers the elements that actually influence product performance and reliability over time.

1. Consistency

A credible supplier should be able to demonstrate stable batch performance across months or years.

Look for:

- Narrow purity ranges
- Repeatable cannabinoid profiles
- Predictable behavior in the same formulation
- Historical COAs that confirm reproducibility

If a supplier cannot demonstrate a clear record of consistency, the costs of testing, reformulation, and batch adjustments often outweigh any price advantage.

2. Scalability

Product launches and line expansions depend on uninterrupted supply.

Before committing to a supplier, confirm:

- Average batch size
- Maximum batch output
- Lead times for routine orders
- Lead times for scale-ups
- Contingency plans for material shortages

The goal is to avoid scenarios where strong consumer demand cannot be met due to upstream limitations.

3. Transparency

The best suppliers provide complete, accurate, and timely documentation without being prompted.

Indicators of strong transparency include:

- Full COAs with residuals, heavy metals, and identification methods
- Traceability documentation that shows the chain of custody from each production step to the final ingredient. *This should clearly outline how material moves through the process, from biomass through extraction, distillation, and isolation.*
- Clarity about production methods
- Clear explanations of variation when it occurs
- Openness to questions from R&D and quality teams

Transparency is often the strongest predictor of whether a supplier will support you when challenges arise.

4. Regulatory Alignment

A supplier's understanding of the regulatory landscape directly affects your downstream risk.

Evaluate whether they:

- Monitor changes at the federal and state level
- Provide documentation that aligns with Food cGMP expectations
- Understand the nuances of the Farm Bill and recent regulations
- Disclose anything that may influence labeling or compliance
- Demonstrate internal controls that support audit readiness

A supplier who stays ahead of regulatory changes gives brands more stability and fewer surprises.

5. Technical Support

Ingredients do not exist in isolation. They behave differently depending on the matrix, dosage form, and pairing with other actives.

Strong suppliers offer:

- Formulation guidance
- Troubleshooting support
- Data that helps anticipate stability or sensory outcomes
- Direct access to technical expertise
- Advice on compatibility with emulsions, powders, lipids, and other systems

This support can shorten development timelines and improve product performance.

6. Risk Mitigation Policies

Reliable suppliers back up their materials with clear agreements that protect the customer.

Key items include:

- Return or replacement terms
- Conditions for credit or refund
- Processes for investigating out-of-spec results
- Turnaround time for corrective actions

Procurement teams should treat these policies as essential. They define how the supplier behaves when the unexpected occurs.

What This Means for Buyers

Evaluating suppliers through this broader lens helps teams:

- Minimize operational risk
- Reduce development and manufacturing delays
- Maintain consistent product quality
- Build long-term relationships that support innovation
- Make procurement decisions based on evidence rather than price pressure

The most successful cannabinoid programs rely on suppliers who combine scientific rigor, operational reliability, and transparent communication.

SUPPLIER SCORECARD

Evaluating Suppliers Beyond Price

Rate each category from **1 to 5**.

A strong supplier consistently scores **4 or 5** across most areas.

Evaluation Area	What to Look For	Score (1-5)
Consistency	Tight purity ranges, reproducible COAs, predictable formulation behavior	
Scalability	Stable lead times, large batch capacity, and the ability to support growth without quality drift	
Transparency	Complete COAs with residuals and heavy metals, clear documentation, and full traceability	
Regulatory Alignment	Understanding of federal and state nuances, Farm Bill compliance, and accurate reporting	
Technical Support	R&D guidance, formulation troubleshooting, stability, and compatibility data	
Risk Mitigation	Clear return policies, replacement terms, and defined resolution timelines	
Platform Agility	Multiple manufacturing routes for the same cannabinoid, flexibility to shift production methods if regulations evolve, and the ability to maintain supply even when one pathway becomes constrained.	

This scorecard is directional. Final evaluations will involve subjective judgment based on factors such as risk tolerance, responsiveness, and overall supplier confidence.

How to use this scorecard:

Add scores for each area and compare suppliers side-by-side.

Patterns matter more than individual numbers.

Suppliers with low marks in consistency, regulatory alignment, or transparency tend to create downstream work and greater compliance exposure.

Suppliers who excel across the board, especially in platform agility, provide long-term stability for brands navigating changing rules and shifting market expectations.

RED FLAGS AND GREEN FLAGS

Red Flags and Green Flags

Even when documentation appears complete, not all cannabinoid suppliers operate with the same level of rigor. Procurement teams can avoid costly mistakes by learning to recognize the signals that indicate strong performance on one end of the spectrum and potential risk on the other.

These indicators help teams move beyond surface-level claims and evaluate suppliers based on evidence, reliability, and operational maturity.

Red Flags

Red flags signal uncertainty, weak controls, or gaps in scientific or regulatory understanding. A single red flag is not always disqualifying, but patterns usually are.

Incomplete or inconsistent COAs

- Missing residual solvent data
- No heavy metals testing
- Missing identification method
- COAs with wide purity variation from batch to batch

Unverifiable source information

- Vague descriptions of production methods
- No traceability documentation
- Claims that cannot be supported with data

Irregular communication

- Slow responses to technical questions
- Evasive answers about variability
- No clear explanation when results shift unexpectedly

Unpredictable supply

- Long or inconsistent lead times
- Irregular batch sizes
- No contingency plan for scale-up or shortages

Overly simplistic regulatory claims

- Statements that ignore state-level restrictions
- Lack of awareness of how cannabinoids are classified in specific product categories

These conditions often create downstream issues in formulation, compliance, and production timing.

Green Flags

Green flags indicate that the supplier understands the complexity of cannabinoid sourcing and has built systems that support consistency and transparency.

Strong documentation

- Full COAs with potency, isomers, residuals, and heavy metals
- Clear batch numbers
- Identification methods such as HPLC or LC-MS
- Traceability from raw materials through finished ingredients

Predictable performance

- Tight purity ranges
- Consistent results across multiple historical batches
- Stable sensory behavior in the same formulation

Operational transparency

- Willingness to explain variability
- Open dialogue about manufacturing methods
- Proactive sharing of updates or changes

Regulatory fluency

- Understanding of Farm Bill definitions
- Awareness of state-level rules
- Documentation aligned with food-grade cGMP standards
- Ability to articulate how their materials fit into different product categories

Support for product developers

- Guidance on formulation challenges
- Stability insights
- Compatibility data for emulsions, powders, and oil systems

Suppliers who demonstrate these qualities tend to support smoother development cycles and stronger long-term outcomes for brands.

Why This Distinction Matters

Red flags help procurement teams protect themselves from unexpected costs and compliance exposure.

Green flags identify the partners who will support successful, scalable product development.

A clear view of both sides allows teams to evaluate cannabinoid suppliers with confidence and choose partners that align with their operational standards, regulatory expectations, and growth objectives.

What This Looks Like in Practice

Even a strong procurement framework becomes more meaningful when applied to a real scenario. The example below illustrates how early diligence can protect a brand from costly reformulation work, unexpected production delays, and unnecessary regulatory exposure.

Our distributor network sees situations like this often, and the patterns are remarkably consistent.

CASE STUDY: HOW A BEVERAGE BRAND AVOIDED A COSTLY REFORMULATION

Case Study: How A Beverage Brand Avoided A Costly Reformulation

A functional beverage company planned to launch an energy drink with THCv as the primary active. The brand had narrowed its search to two suppliers. Both offered appealing pricing, fast sample availability, and THCv at the expected purity. On the surface, the choices looked similar.

The differences only became visible once the team applied a structured evaluation process.

Initial Review

Supplier A

- THCv at target potency
- Potency-only COA (cannabinoid levels reported without full analytical panel)
- Residual solvent testing is not set to the jurisdiction's compliance standards (eg USP levels are 890ppm, but Colorado requires 20ppm for a specific solvent)
- No heavy metals testing
- Minimal detail on the production method

Supplier B (BayMedica)

- THCv with consistent potency across multiple batches
- Full COA including residual solvents, heavy metals, and identification method, with clearly stated testing limits and units (e.g., µg/g)
- Clear traceability documentation
- Transparent explanation of the production route
- Stable lead times and repeatable batch sizes

Both suppliers met the cost target. Only one demonstrated the discipline needed to support a high-volume national beverage launch.

The Turning Point

The brand ran an independent third-party test on Supplier A's sample.

The results revealed:

- Variability in THCv purity compared with the supplier's COA
- A detectable but unreported isomer
- Residual solvents above the brand's internal threshold for beverage applications

Any of these findings could have disrupted stability testing. Together, they would have forced the R&D team to reformulate under pressure.

Supplier B's material, by contrast, aligned with all internal expectations. The COA matched the third-party tests. The ingredient behaved predictably during early bench work. Nothing in the data created a downstream surprise.

Outcome

The brand selected Supplier B (BayMedica) and avoided:

- Emergency reformulation
- Additional stability testing
- Packaging and label adjustments
- Delays in production scheduling

The product launched on time, and the brand established a long-term relationship with a supplier that could support future line extensions and seasonal variants.

This is the hidden value of disciplined procurement. What looks like a small difference in documentation often becomes a major difference in product success.

Why This Matters

Real-world outcomes show that effective sourcing is not about finding the lowest price. It is about finding the suppliers who reduce operational risk, strengthen product reliability, and support the pace of innovation.

Teams that follow a clear procurement framework:

- Prevent avoidable launch delays
- Reduce variability in finished products
- Build stronger internal confidence across R&D, QA, and regulatory
- Protect the long-term health of the brand

The organizations that invest time early in the process move faster later in the development cycle, because their foundation is stable.

ADDITIONAL RESOURCES

Additional Resources

Procurement decisions are stronger when teams have access to reliable scientific information and market context. These resources support ongoing education, informed supplier evaluation, and clearer communication between R&D, regulatory, and procurement teams. They also help brands stay aligned with the fast-moving landscape of cannabinoids.

Market Reports

BayMedica's market reports provide a data-driven view of the cannabinoid industry.

They highlight:

- Ingredient pricing patterns
- Product category growth
- Emerging opportunities in non-intoxicating minors
- Regulatory themes that influence product planning

These reports help brands make strategic decisions about which cannabinoids to prioritize and how to anticipate demand.

Download the latest BayMedica Market Report [here](#).

Minor Cannabinoid White Papers

Each white paper compiles and synthesizes the available scientific research on rare cannabinoids. These documents are designed to help product developers understand the current evidence base without embellishment or over-interpretation. Readers gain:

- Mechanistic and biological overviews of cannabinoids such as THCV, CBC, and CBDV
- Summaries of published human and preclinical studies
- Aggregated data from peer-reviewed research, compiled in a format that is easy to reference
- Clear, citation-driven descriptions of what the science currently supports

All scientific claims are reviewed and validated by BayMedica's scientific team to ensure the evidence is strong, the methods in the literature are sound, and the conclusions presented in the papers are justified by the data.

These white papers do not provide regulatory or stability guidance. Instead, they present the scientific findings so readers can draw their own conclusions about potential product applications and opportunities for innovation.

Download the BayMedica White Papers [here](#).

The Rare Report Substack

The Rare Report delivers ongoing thought leadership grounded in scientific rigor and practical industry insight. Each edition is **independently written by Dr. Anthony Ferrari, Ph.D.**, a cannabinoid scientist and analytical chemist with more than a decade of experience in cannabinoid research, analytical method development, and product development.

The series is **sponsored by BayMedica**, but all insights and opinions expressed in The Rare Report belong solely to Dr. Tony and the contributing authors.

Subscribers receive:

- **Commentary on market evolution**, including pricing trends, regulatory pressure points, and shifts in demand for rare cannabinoids
- **Deep dives into cannabinoid science**, with clear explanations of mechanisms, receptor interactions, and new discoveries
- **Emerging regulatory interpretations**, with context that helps brands anticipate what is coming next
- **Product development insights**, especially for innovators seeking to differentiate through rare cannabinoids
- **Little-known scientific findings**, use cases, and mechanistic explanations that rarely surface in public-facing cannabis content
- **Curated resources**, including new studies, analytical tools, and research pathways relevant to scientists, formulators, and advanced product developers

The Rare Report is built for industry professionals who want to stay ahead of the curve, understand the science beneath the headlines, and apply credible cannabinoid innovation inside real commercial environments.

[Subscribe to the Rare Report here.](#)

Distributor Page

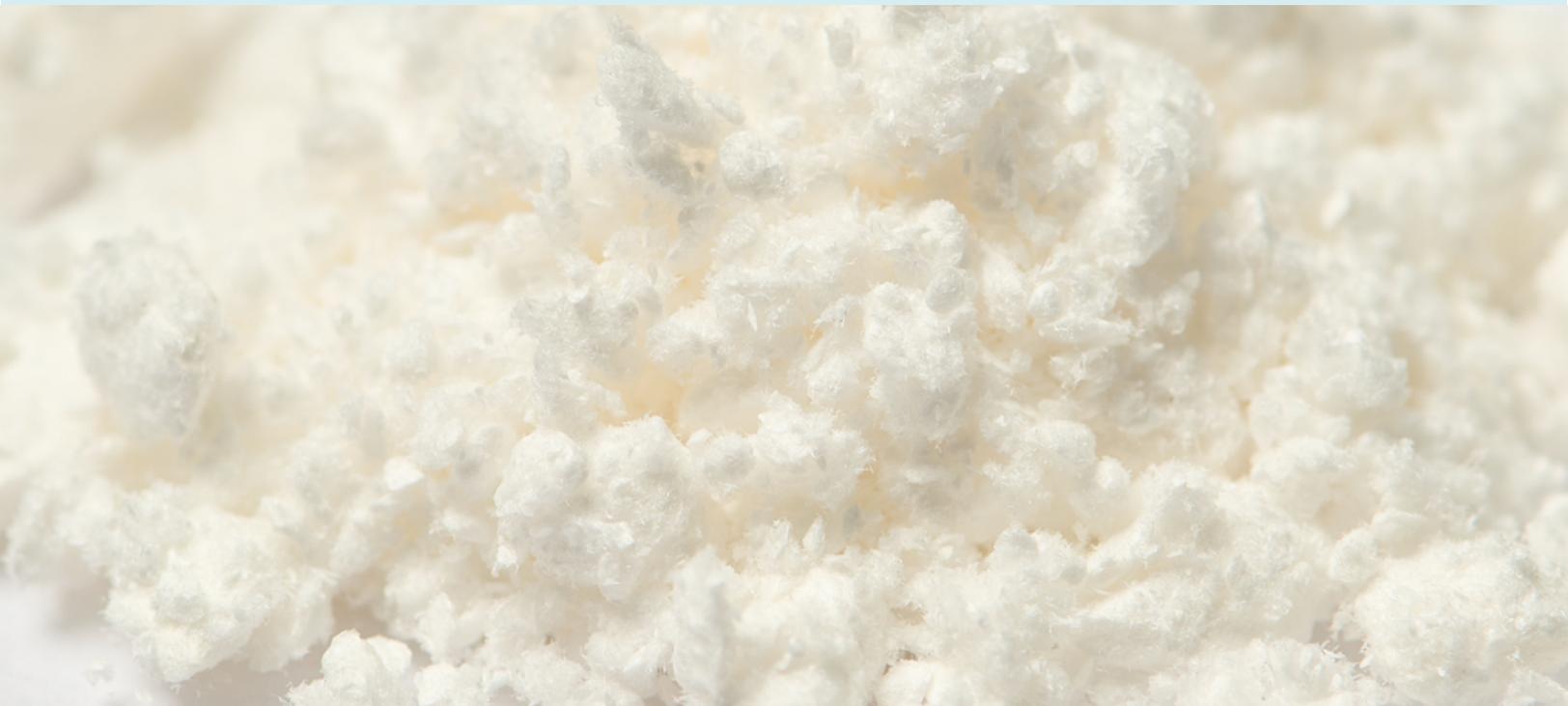
Brands seeking ingredient access can connect with trusted distribution partners through BayMedica's Distributor Page.

Visitors will find:

- **Contact information**
- **Ingredient availability**
- **Market reach**
- **Support capabilities**

This network gives buyers a direct path to verified high-quality material.

[View all BayMedica Trusted Distribution partners here.](#)



A CALL TO ACTION

A Call to Action

Effective procurement begins with clarity. When teams understand what to request, how to evaluate it, and which signals matter most, they move faster and reduce risk across every stage of development. The tools in this guide are designed to support that process, whether you are sourcing your first minor cannabinoid or scaling an existing portfolio.

The next step is simple. Put the framework to work.

Next Steps

[Download your 'Procurement Checklist' PDF here.](#)

Use the supplier scorecard and the step-by-step workflow to evaluate your current vendors or review new ones.

The checklist helps you:

- Identify gaps in documentation
- Compare suppliers objectively
- Reduce uncertainty in the development cycle
- Strengthen partnerships that support long-term success

This resource makes it easy for your team to apply the principles in this guide right away.

Connect With a BayMedica Distribution Partner

If you are planning a new formulation or reviewing cannabinoid inputs, a trusted distribution partner can help you evaluate options and understand the best route for your specific product.

Partners provide:

- Verified ingredient access
- Technical support when questions arise
- Clear documentation for regulatory review
- Guidance on which cannabinoids align with your functional goals

Reliable sourcing begins with reliable relationships. [Connect with a trusted BayMedica Distributor here.](#)

Start Building With Confidence

Brands that invest in thoughtful procurement do more than secure high-quality cannabinoids. They shorten development timelines, reduce operational friction, and deliver products that perform consistently.

If you are ready for next steps, explore the resources, download the checklist, or reach out to begin a conversation with a distribution partner who understands your category and your goals.

Your cannabinoid program can move forward with clarity, consistency, and confidence.



CANNABINOID PROCUREMENT CHECKLIST

A practical, evidence-based tool for evaluating cannabinoid suppliers

Cannabinoid Procurement Checklist

This checklist provides a practical framework for evaluating cannabinoid suppliers beyond marketing claims or single lab reports. The table below highlights the minimum documentation and verification steps procurement teams should request to reduce quality risk and ensure predictable supply.

Verification Step	What to Request	Why It Matters	Red Flag
COA	Third-party lab COA with cannabinoid panel, residuals, heavy metals, solvents	Confirms purity & compliance	Missing or mismatched data (e.g. batch # on the CoA does not match the batch # on the product you received)
GMP / ISO Cert	Certificates, audit summaries, attestations	Ensures consistent production	No certs or unverifiable
SDS / TDS	Safety & technical data sheets	Essential for formulation	"We don't provide that."
Traceability	Lot number linked to lab report	Supply chain integrity and recalls	Inconsistent numbering
Spec Sheet	Product spec sheet with defined ranges	Clarifies expected composition	Missing or vague specs
Claim Attestations	Written attestation for all claims (e.g., food-grade GMP)	Confirms claims are documented and defensible	No written attestation
Chain of Custody	Documentation linking each step to the batch (if plant-derived)	Ensures traceability from biomass to final product	Gaps in movement history
Dual Testing	Two COAs from separate labs or proof of duplicate testing	Confirms accuracy, reduces lab error risk	Only one COA provided; no option for duplicate testing

This checklist is designed to help teams evaluate cannabinoid suppliers and align internally before sourcing begins. It can be used as a shared reference across procurement, quality, R&D, and formulation teams to clarify requirements, standardize evaluation criteria, and reduce avoidable sourcing risk. Used consistently, it supports stronger supplier alignment and more predictable batch-to-batch quality.

1. Internal Alignment (Before Sourcing)

Confirm requirements internally before engaging suppliers.

Defined functional role of the cannabinoid in the formula

Target purity and concentration range

Solubility expectations

Defined acceptable variability window (what deviation is tolerable batch-to-batch)

Identified performance risks if purity or ratios drift

Identified non-negotiables vs tradeoffs (e.g., purity vs scale, crystallinity vs solubility)

Sensory tolerances (taste, aroma, color, mouthfeel)

Intended product category and constraints

Determined whether plant-derived, non-plant-touching, or synthesized material is required

Confirmed whether specific manufacturing platforms are required for brand, regulatory, or supply-chain reasons

2. Documentation to Request

Baseline documentation required from every supplier.

Third-party COA for the specific batch that includes a Cannabinoid Potency Panel, including an extended panel that captures all relevant isomers that could be present (e.g., Δ8-THCV in THCV)

Residual Solvents Panel - including all solvents used in the production process

Heavy Metals Panel

Pesticides Panel (if applicable)

Microbial Testing Panel (when relevant)

Second COA from a different lab or confirmation of duplicate testing

Chromatogram (HPLC, LC-MS, or equivalent)

SDS and TDS

Product specification sheet with defined acceptance ranges

Lot number and traceability documentation

Manufacturing method description

Food cGMP or other relevant GMP / ISO certifications

Written attestations supporting all claims (e.g., food-grade GMP)

Chain of custody documentation (if plant-derived)

3. COA & Data Review

Evaluate whether the data support consistency and control.

COA batch number matches received material

Tight purity ranges across historical batches

Consistent cannabinoid and isomer profile

Solvent levels align with the process used

Heavy metals within acceptable limits

No unidentified or unexplained peaks

Identification method appropriate for a compound

Variance explanations provided when applicable

4. Supplier Capability & Maturity

Assess whether the supplier can support scale and long-term reliability.

Demonstrated responsiveness and timely follow-through

Clear explanation of the production method

Demonstrated batch-to-batch reproducibility

Platform agility (multiple production routes available)

Ability to adjust production routes if market conditions change

Transparent documentation practices

Open communication about variability

Technical support available for formulation and scale-up

Demonstrated understanding of regulatory landscape

Willingness to disclose manufacturing route at a high level

Willingness to explain known sources of variability

Ability to explain what is not tested and why

5. Supply Chain & Operations

Evaluate operational reliability and resilience.

Average and maximum batch size

Typical lead times

Lead times for scale-ups

Seasonal or demand-driven constraints disclosed

Adequate backstock maintained

Contingency plans for shortages

Manufacturing change-control process explained

6. Intake Testing & Verification

Confirm quality independently.

Inbound material is tested upon receipt

Potency verified against COA

Solvents and heavy metals confirmed

Isomers and unexpected compounds evaluated

Results documented and archived

Two COAs from different labs or an intake testing protocol

Clear internal policy on when retesting is required

Defined escalation path when results conflict

7. Return & Replacement Terms

Reduce risk if the material fails to meet specifications.

Sufficient window to test inbound material

Clear process if the material is out of specification

Responsibility for return shipping is defined

Replacement timelines acceptable

Credit and refund options available

Out-of-spec investigation process documented

8. Red Flag Scan

The COA does not include an extended panel of like isomers if applicable (e.g. D8 THCV)

COA reports "Pass" when the level of detection (LOD) is greater than the threshold for compliance in the state, country or other applicable governing body. Then the level of detection (LOD) is greater than the threshold for compliance in the state, country.

"Non-Detect" reported with a limit of detection (LOD) that is greater than the threshold required by the state, country or other applicable government body (e.g. limit for THC in Japan is 1ppm and the CoA reads ND with an LOD of 180ppm)

The testing lab does not test residual solvents to the ppm thresholds required in your state

Actual solvent ppm values not listed (Pass/Fail only)

Missing residual solvent or heavy metals data

Total cannabinoids well under 100% and no chromatogram available to confirm delta or unknowns

Reuse of COAs across batches

Inconsistent lot numbering

Oversimplified compliance claims

Evasive answers to technical questions

