BURGESS ORIGIN CO

Verified Nilotica Shea Butter · Northern Uganda

Verifying the Source

Supply Chain Documentation Standards and The Case for Traceable Nilotica Shea Butter in the U.S. Cosmetic Ingredient Market

Nicholas Burgess

Founder & Managing Director, Burgess Origin Co

Northern Virginia, United States

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INDUSTRY WHITE PAPER

This document contains primary source laboratory documentation, Uganda National Bureau of Standards government test reports, not previously published in U.S. institutional research literature.

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The U.S. cosmetic ingredient market pays a documented 2–5× premium for *Vitellaria paradoxa* ssp. *nilotica* (Nilotica shea butter) from East/Central Africa over West African ssp. *paradoxa*, a premium justified by the subspecies' oleic-dominant fatty acid profile, lower melting point (25–30°C versus 34–38°C for West African varieties), and superior skin penetration characteristics. That premium cannot currently be verified through any systematic documentation standard available to U.S. ingredient buyers.

Independent multi-country analytical work and newer genetic studies confirm that East/Central African Nilotica shea is a distinct chemotype within *Vitellaria paradoxa*, characterized by higher oleic and lower stearic acid than West African shea and a consistently lower melting point (Di Vincenzo et al., 2005; Maranz et al., 2004).

This white paper is intended to help close a specific gap in the U.S. record on Nilotica shea butter: the absence of a consolidated, evidence-based framework for understanding subspecies differences and the documentation needed to reflect them. Rather than proposing a commercial program, the paper assembles scattered scientific, standards, and market sources into a single, practical reference that U.S. formulators, regulators, and ingredient buyers can use to evaluate Nilotica claims more critically.

The underlying science, standards, and sector reports on Nilotica shea are public, but they are fragmented across agronomy journals, national standards, Codex tables, and European development briefs that were never assembled into a Nilotica-specific documentation framework for the U.S. market. Burgess Origin Co's advantage is not secret data; it is the rare, non-trivial synthesis of this scattered record into an operational standard that directly serves U.S. brand, regulatory, and laboratory workflows.

KEY DATA POINTS

2–5×	57% vs. 47%	25–30°C vs. 34–38°C
Price premium: Nilotica vs. West African *paradoxa*	Oleic acid mean: Uganda Nilotica vs. West African *paradoxa*	Nilotica vs. West African shea melting point
CSJ (2024), Table 5	*CSJ (2024), Table 1*	*CSJ (2024)*

KEY METRIC	VALUE AND SOURCE
Uganda Nilotica oleic acid mean	57.4% vs. 46.6% Nigeria *paradoxa*, CSJ (2024), Table 1
UNBS acid value, December 2025 batch	17.7 mgKOH/g (FAIL vs. ≤15 limit), UNBS FA/2025/13316

KEY METRIC	VALUE AND SOURCE
UNBS acid value, January 2026 retest	1.2 mgKOH/g (PASS, 93% reduction), UNBS FA/2026/00807
Microbiology panel, December 2025	All 6 parameters passed; all pathogens not detected (UNBS ML/2025/08149)
Codex STAN 210 shea butter entry	Not present: shea butter absent from Table 1 fatty acid composition standard
Correct GC method for vegetable oils	AOCS Ce 1h-05 (not Ce 1j-07, which is for dairy/ruminant fats)
Global shea market (2023)	USD 2.8 billion, projected USD 5.6 billion by 2033 (CAGR ~8.6%)

SECTION 1

The Problem

MARKET FAILURE: SPECIES, PREMIUM, AND THE VERIFICATION GAP

The U.S. market for Nilotica shea butter is growing, premium-priced, and largely unable to verify what it is purchasing. This section establishes the subspecies distinction, the premium it commands, the documentation failure that allows mislabeled product to circulate undetected, and the commercial consequences for buyers who cannot tell the difference.

$5.6B	$37B	<1%
Projected global shea market by 2033	Natural cosmetics market projected by 2032	Uganda's share of global shea trade vs. 0.8M SET potential
Multiple market research sources	*Grand View Research (2023)*	*CSJ Uganda Shea Market Study (2024)*

1.1 WHAT IS NILOTICA SHEA BUTTER

Shea butter is a fat extracted from the dried kernels of the shea tree (*Vitellaria paradoxa*), indigenous to semi-arid regions across 21 Sahel-Sudanian-Savannah African countries. The shea tree is taxonomically defined with two subspecies: ssp. *paradoxa*, which grows across West Africa, and ssp. *nilotica*, which grows in East and Central Africa: specifically, Uganda, South Sudan, the Democratic Republic of Congo, Chad, Ethiopia, and Cameroon.

These two subspecies are not interchangeable products with minor regional variation. They have meaningfully different chemical compositions, physical properties, and performance characteristics that are directly relevant to cosmetic formulation. *Vitellaria paradoxa* ssp. *nilotica*, commonly referred to as Nilotica shea, takes its name from its habitat along the Nile River basin. In Uganda, the shea tree grows across a broad swathe of Northern Uganda, concentrated in what the CSJ Uganda Shea Market Study (2024) describes as a region of favorable climate and shea parklands.

The chemical differences between East/Central African Nilotica and West African shea are rooted in both genetics and geography. Population-level and gene-level studies of *Vitellaria paradoxa* show that Ugandan and neighboring East/Central African trees (ssp. *nilotica*) form a distinct group from West African trees (ssp. *paradoxa*), and this divergence is expressed in consistently higher oleic and lower stearic acid in Nilotica fats. Climate, soils, and long-term farmer selection within the shea belt reinforce these chemotypes, so the soft Nilotica profile and the harder West African profile are products of stable subspecies-level biology rather than minor batch-to-batch variation (Di Vincenzo et al., 2005; Maranz et al., 2004).

Uganda's potential shea production is estimated at 0.8 million Shea nut Equivalent Tons (SETs), and yet Uganda currently contributes less than 1% to international shea trade (CSJ, 2024). The gap between what Uganda could supply and what it currently exports is not a production problem. It is a market access, supply chain, and documentation problem.

1.2 WHY NILOTICA COMMANDS A PREMIUM

The premium that Nilotica shea from East/Central Africa commands in international markets is not branding. It is chemistry. The fatty acid profile of *Vitellaria nilotica* is categorically different from West African *Vitellaria paradoxa*, and that difference has direct consequences for formulation performance, skin absorption, and product texture that cosmetic chemists recognize and pay for.

The Fatty Acid Profile Distinction

Table 1 below reproduces comparative fatty acid data from CSJ (2024), which draws on primary analysis by Maranz et al. (2004) and Lovett (2014). The critical differentiator is the dominant fatty acid: in Nilotica varieties, oleic acid (C18:1) is dominant. In West African *paradoxa* varieties, stearic acid (C18:0) is dominant. This is not a marginal difference in degree, it is a reversal of dominance between the two primary fatty acids.

ORIGIN	PALMITIC 16:0 (%)	STEARIC 18:0 (%)	OLEIC 18:1 (%)	LINOLEIC 18:2 (%)	DOMINANT FATTY ACID
Uganda (Nilotica)	4.7	30.7	57.4	5.7	**Oleic ✓**
South Sudan (Nilotica)	4.0	30.2	57.0	6.6	**Oleic ✓**
Chad (Nilotica)	5.3	32.3	54.8	8.1	**Oleic ✓**
Nigeria (West African)	3.9	40.8	46.6	7.1	Stearic
Mali (West African)	3.8	42.4	45.5	6.9	Stearic
Burkina Faso (West African)	3.8	44.1	44.0	6.4	Stearic
Ghana (West African)	4.0	45.6	43.3	6.3	Stearic

Table 1. Comparative fatty acid profiles of Vitellaria paradoxa ssp. nilotica (East/Central Africa) vs. ssp. paradoxa (West Africa). Green shading = Nilotica origin; amber shading = West African paradoxa. Source: CSJ Uganda Shea Market Study (2024), citing Maranz et al. (2004) and Lovett (2014).

This subspecies distinction is not limited to the data reproduced here. A landmark compositional study by Di Vincenzo et al. (2005) analyzed 150 shea butter samples from Mali, Burkina Faso, Nigeria, and Uganda, quantifying triacylglycerols, fatty acids, and acetyl and cinnamyl triterpenes. The authors reported that Ugandan samples, classified as *V. paradoxa* ssp. *nilotica*, consistently exhibited higher oleic acid and lower stearic acid than West African samples from Mali, Burkina Faso, and Nigeria, which were stearic-dominant, and that the Ugandan cluster was statistically distinct from the West African groups in overall lipid composition. Within that 150-sample data set, Uganda's Nilotica group is the most oleic-rich and lowest-melting of the four countries compared, directly supporting the performance claims formulators already associate with Nilotica.

Why the Fatty Acid Profile Matters for Formulators

The practical consequences of this chemical difference for cosmetic formulation are significant. Oleic acid's higher proportion in Nilotica means the butter is more fluid at ambient temperature, with a melting point of 25–30°C compared to 34–38°C for West African varieties (CSJ, 2024). For a cosmetic formulator, this translates directly into faster and deeper skin penetration, oleic acid is a well-documented penetration enhancer; superior spreadability at skin temperature; softer, creamier texture in finished products; and distinct formulation behavior requiring separate characterization from West African shea. A formulator who has characterized a product with West African shea cannot simply substitute Nilotica without adjusting the formulation. They are not interchangeable ingredients.

The Price Premium: Documented

The CSJ Uganda Shea Market Study (2024) provides pricing data that quantifies what the cosmetic industry already pays for the distinction.

PRODUCT TYPE	WEST AFRICAN ($/KG)	NILOTICA ECA ($/KG)	PREMIUM MULTIPLE
Industrial expeller, conventional	$1.30–$1.80	$3.68–$8.50	**2–5×**
Industrial expeller, organic	$2.00–$2.50	~$6.00	**2–3×**
Handcrafted conventional	$1.60–$2.00	$2.11–$3.51	**1.5–2×**

Table 2. Comparative ex-works pricing per kilogram, West African shea vs. Nilotica (East/Central African) shea butter. Source: CSJ Uganda Shea Market Study (2024), Table 5.

Industrial expeller Nilotica shea from East/Central Africa commands $3.68–$8.50 per kilogram against $1.30–$1.80 for comparable West African product, a 2–5× premium documented at the commodity level before brand positioning or certification premiums are applied.[1]

1.3 THE ADULTERATION AND MISLABELING PROBLEM

The premium that Nilotica shea commands in international markets is the same force that drives its adulteration. When a product sells for two to five times the price of its nearest substitute and the two materials are physically similar in appearance, the economic incentive to mislabel, dilute, or substitute is structural rather than incidental. That incentive

operates at every node of the supply chain where verification is absent, and in the current U.S. market, verification is almost universally absent.

Two distinct adulteration patterns operate in the global shea and African butter supply chain, and both are relevant to any buyer making a Nilotica-specific claim.

Subspecies and Species Substitution

The first and most commercially significant pattern is subspecies and species substitution. The primary form of this problem, West African *Vitellaria paradoxa* ssp. *paradoxa* sold as “Nilotica,” “East African shea,” or simply as an undifferentiated premium shea butter, is addressed throughout this white paper. It exploits two structural conditions simultaneously: the shared INCI designation *Butyrospermum Parkii* (Shea) Butter, which makes no subspecies distinction on a label or in a formulation record, and the absence of systematic GC fatty acid documentation in current U.S. supply chains, which means the substitution cannot be detected without analytical testing.

A less commonly discussed but materially relevant species-level risk involves *Pentadesma butyracea*, the kpangnan or tallow tree, a distinct botanical species native to humid West and West-Central African forest and riverine zones, Benin, Togo, Ghana, Côte d’Ivoire, Nigeria, Cameroon, Gabon, Congo, and western DRC. *Pentadesma butyracea* is not *Vitellaria* in any taxonomic sense; it belongs to a different plant family entirely. Its fat yields a broadly shea-like fatty acid profile in gross composition, with stearic and oleic acid as the dominant fractions, which is precisely why it appears informally in trade as “yellow shea,” “kpangnan butter,” or undifferentiated “African butter” in some West and Central African markets. Its presence in a supply chain without disclosure is not a regional labeling convention. It is a species-level substitution that affects both the chemical profile of the finished product and the defensibility of any origin or purity claim a brand places on label. A buyer who has validated a formulation against a *Vitellaria nilotica* fatty acid profile cannot assume that a kpangnan-containing substitute will perform identically, and cannot claim “Nilotica shea butter” on the basis of documentation that does not distinguish between the two at the species level.

Composition Stretching with Generic Fats and Fillers

The second adulteration pattern operates differently and is in some respects harder to detect. Genuine shea butter (of any subspecies or species origin) is cut with low-cost fats and fillers: hydrogenated vegetable oils, animal tallow, starches, fruit pulps, synthetic waxes, or combinations thereof. This practice is documented in the broader edible and cosmetic fat adulteration literature and surfaces persistently in trade discussions around “fake shea” and “extended shea.” The product is typically marketed as “shea butter” or “African butter” with no change in INCI name, no front-of-pack disclosure, and often no indication in supplier-produced COAs or MSDS documents that any blending has occurred. A COA that lists the expected parameters (acid value, moisture content, peroxide value) for a pure shea sample may still reflect a blended product if the testing was conducted on a selected sample rather than a representative draw from the shipment batch. Composition-stretched products degrade formulation performance in proportion to the dilution, undermine any origin or purity claim the finished brand makes in commerce, and create regulatory substantiation risk under the FTC Act for brands that cannot demonstrate what their ingredient actually contains.

Documentation as the Only Reliable Break in the Incentive Loop

Both patterns, subspecies and species substitution, and composition stretching with generic fats, are analytically visible if, and only if, the documentation architecture is adequate. Batch-specific UNBS chemistry and microbiology reports, issued under government laboratory authority with independently verifiable sample numbers, establish origin and confirm that the material meets basic quality parameters at the time of testing. Independent GC fatty acid analysis, conducted by an ISO 17025-accredited laboratory applying AOCS Ce 1h-05 to vegetable fat matrices and evaluated against species-specific reference ranges for *Vitellaria paradoxa* ssp. *nilotica*, confirms subspecies identity and rules out the gross composition anomalies that composition stretching introduces. The Originilotica documentation standard treats both elements as non-optional for any supply chain making a “Nilotica shea butter” or “100% shea butter” claim. Neither element alone is sufficient, origin without species verification leaves the subspecies question open; species verification without origin documentation leaves the supply chain unanchored at the source.

Because the category loosely described as “African butter” spans a genuine ecological and botanical cluster, from Sahelian parkland *Vitellaria* to humid forest *Pentadesma*, and because the economic incentives at every stage of the supply chain favor dilution with generic fats wherever testing is absent, a documentation standard that stops at supplier-produced COAs, organic certifications, or fair trade marks is structurally insufficient to substantiate the claims that premium Nilotica pricing requires. The remainder of this white paper defines the verification architecture required to align what buyers pay for with what they can demonstrate they are receiving.

1.4 THE CONSEQUENCES FOR U.S. BUYERS

The documentation gap in the Nilotica shea supply chain creates specific, quantifiable risks for U.S. cosmetic formulators, ingredient buyers, and finished product brands, risks that operate at the formulation, regulatory, and reputational levels simultaneously.

Formulation Performance Inconsistency

A cosmetic chemist who formulates a product using verified Nilotica shea, with its oleic-dominant fatty acid profile, 25–30°C melting point, and superior skin penetration characteristics, has characterized that product based on specific ingredient behavior. If subsequent purchase orders deliver West African *paradoxa* mislabeled as Nilotica, the formulation behaves differently. Batch-to-batch inconsistency in a finished product is a quality control failure that originates at the ingredient sourcing level and cannot be diagnosed without ingredient-level species verification.

Regulatory Exposure Under the FTC Act

The Federal Trade Commission Act prohibits deceptive claims in marketing. The controlling standard is not knowledge of falsity, it is substantiation. A brand that labels a product “Nilotica shea butter” must have competent and reliable evidence supporting that claim at the time it is made. If the ingredient is *paradoxa* and the brand cannot produce species verification documentation, the claim is unsubstantiated regardless of intent. FTC enforcement in the natural cosmetics sector has increased, and ingredient-level species-of-origin claims are within the scope of Section 5 of the FTC Act.

ANALYTICAL NOTE

Important distinction: The absence of shea butter from Codex STAN 210's fatty acid composition table does not expose West African *paradoxa* sellers making general "shea butter" claims. *Paradoxa* is extensively documented in peer-reviewed literature with well-established fatty acid ranges, and a general shea butter claim backed by GC analysis is adequately substantiated. The FTC exposure applies specifically to subspecies distinction claims, brands marketing West African *paradoxa* as Nilotica, or making "100% Nilotica" claims they cannot support with species-specific documentation.

MoCRA Compliance Risk

The FDA's Modernization of Cosmetics Regulation Act (MoCRA), fully effective in 2023, strengthened requirements for cosmetic product safety substantiation. Brands are expected to maintain documentation supporting ingredient safety. An ingredient sourced from an unverified supply chain, without government laboratory testing records or traceable batch documentation, represents a gap in the safety file that MoCRA's framework is designed to close. The regulatory direction is unambiguously toward more documentation, not less.

SECTION 2

The Research Gap

INSTITUTIONAL ASYMMETRY: EUROPE'S KNOWLEDGE INFRASTRUCTURE VS. THE U.S. VACUUM

Two continents participate in the same global Nilotica shea supply chain. Europe's market intelligence infrastructure has produced institutional documents, government-funded, publicly available, and operationally specific, that give European ingredient buyers a research foundation for sourcing decisions. The United States has produced none. This section documents what exists, what is absent, and why the gap is structural rather than incidental.

2.1 WHAT THE EUROPEAN MARKET ALREADY KNOWS

GIZ 2021: East African Shea Sector Brief

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany's federal development agency, published a sector brief on East African shea butter as part of its broader engagement with agricultural value chains in the region. GIZ is not a market research firm. It is a German federal government agency operating with public mandate and institutional credibility. Its sector briefs are used by European ingredient buyers, importers, and development finance institutions as reference documents for sourcing strategy.

The GIZ brief addresses the East and Central African shea sector, including Uganda specifically, covering the supply chain structure, processing methods, quality characteristics of ssp. *nilotica* relative to West African ssp. *paradoxa*, and market development challenges. The document gives European buyers a government-produced reference point for understanding

what Nilotica is, where it comes from, and what documentation they should expect from a verified supply chain. To the author's knowledge, no equivalent document exists from any U.S. government agency.

CBI 2026: Market Intelligence Report for Exporters

The Centre for the Promotion of Imports from Developing Countries (CBI), a Dutch government agency operating under the Ministry of Foreign Affairs, published its 2026 market intelligence report on shea butter for exporters. The CBI 2026 report establishes commercial-grade fatty acid reference ranges for Nilotica shea butter, oleic acid at 57–65% and stearic acid at 30–32%, giving European ingredient buyers a documented basis for evaluating supplier quality claims and analytical results.

> **THE CORE ASYMMETRY**
>
> The asymmetry in one sentence: A Dutch ingredient buyer and a U.S. ingredient buyer are competing in the same global Nilotica shea market. The Dutch buyer has a 2026 government market intelligence report specifying what to look for, what to pay, and how to verify it. The U.S. buyer has marketing copy from suppliers.

2.2 EXISTING MULTI-COUNTRY CHEMISTRY VS. U.S. MARKET KNOWLEDGE

European and international research institutions already recognize regional differentiation in shea fat composition. Di Vincenzo et al. (2005) used high-resolution gas chromatography to characterize triglycerides, fatty acids, and triterpenes in 150 samples from Mali, Burkina Faso, Nigeria, and Uganda, demonstrating that geographic distance between shea populations is reflected in the degree of separation of their chemical profiles. Ugandan Nilotica samples clustered as oleic-dominant, lower-melting fats, while West African samples clustered as stearic-dominant, higher-melting fats, with additional country-level variation in acetyl and cinnamyl triterpenes. What the U.S. market lacks is not awareness that these differences exist, but any practitioner-level documentation standard that translates this science into batch-linked, purchase-ready evidence for Nilotica supply chains.

2.3 WHAT THE U.S. MARKET LACKS

RESEARCH CATEGORY	EUROPEAN INSTITUTIONAL EQUIVALENT	U.S. STATUS
Federal development agency sector brief	GIZ (Germany), 2021 ECA shea brief	None; USDA FAS reports focus on West African supply
Government import promotion body	CBI (Netherlands), 2026 Nilotica market report	None; no U.S. equivalent to CBI mandate
Academic supply chain research	Makerere University (Uganda); multiple European partnerships	No U.S. university has published on Nilotica supply chain documentation
Industry association guidance	Global Shea Alliance (European chapter); UEBT traceability frameworks	No U.S. Nilotica-specific technical guidance from SCC, ACI, or industry bodies
Government lab testing standard	UNBS EAS 967-1:2022; EU Cosmetics Regulation frameworks	FDA/MoCRA requires safety substantiation but no species-specific ingredient standard

Table 3. Comparative research infrastructure for Nilotica shea butter, European institutions vs. U.S. equivalents.

2.4 WHY THE GAP PERSISTS

The absence of U.S. institutional research on Nilotica shea butter has structural causes. The global shea market is overwhelmingly a West African market. Annual exports of shea kernels and butter from the seven major West African producing nations rose from approximately 50,000 tons in the mid-1990s to between 500,000 and 600,000 tons by the mid-2020s (CSJ, 2024). Uganda, by contrast, currently contributes less than 1% of international shea trade despite an estimated production potential of 0.8 million Shea nut Equivalent Tons. U.S. research and development institutions that engage with African agricultural supply chains have historically oriented their shea-related work toward West African supply chains where the volume, the established trade relationships, and the development finance infrastructure are concentrated.

Additionally, no U.S. practitioner with active primary source access to the Nilotica supply chain has produced a document equivalent in scope to the GIZ or CBI reports. Academic researchers who study African agricultural value chains are not typically importers with government laboratory reports in their files. Importers who hold government laboratory reports are not typically published in supply chain management journals. The combination of practitioner knowledge and research credibility required to produce the U.S. equivalent of a CBI market report has not previously converged in a single actor with a publication platform.

2.5 THE OPPORTUNITY IN THE GAP

Geographic scope of the standard. Although this paper is written from the perspective of U.S. ingredient buyers and brands, the documentation framework it describes is technically applicable wherever Nilotica shea is traded. European market intelligence work by development agencies already gives EU buyers a stronger informational baseline on Nilotica than their U.S. counterparts, but it does not replace the need for batch-linked, subspecies-verified documentation. The two-laboratory model, and the underlying acceptance criteria for Nilotica identity, can be adopted by buyers in both markets without modification.

Every research gap is also a positioning opportunity. The absence of U.S. institutional documentation on Nilotica shea butter means that the first practitioner-researcher who produces credible, primary-source-grounded documentation for the U.S. market does not enter a crowded field. They define it. The documentation advantage is asymmetric: an importer who holds UNBS government laboratory reports holds primary source material that no European research institution, no U.S. academic, and no competing importer currently has in publishable form.

SIGNIFICANCE OF THIS WORK

This white paper represents, to the author’s knowledge, the first step toward filling the U.S. research gap on traceable Nilotica shea butter. Its primary source foundation, Uganda National Bureau of Standards government laboratory reports, a live supply chain with documented community sourcing structure, and an eight-document institutional research stack spanning six countries, is the foundation that U.S. market-facing research has lacked. The analytical methodology that makes species verification possible is addressed in Section 3.

The opportunity in this gap is not privileged access to information but the ability to assemble discipline-specific documents into a coherent, market-ready standard for Nilotica shea. European development agencies, Codex committees, AOCS method authors, national bureaus of standards, and academic researchers each solved part of the problem; none was mandated to define a U.S. Nilotica documentation architecture. Burgess Origin Co's differentiation lies in having performed that synthesis with active primary-source access to a live Ugandan supply chain, government laboratory reports, and independent GC analysis, and then formalizing it as an implementable documentation standard for ingredient buyers and brands.

SECTION 3

The Analytical Problem

METHOD, STANDARD, AND DOCUMENTATION: THREE SIMULTANEOUS FAILURES

Verifying that a shea butter sample is Vitellaria paradoxa ssp. nilotica rather than ssp. paradoxa requires gas chromatography analysis of its fatty acid composition, comparing the measured profile against a reference standard for the correct subspecies. The analytical tool exists and is well-established. The problem is that the reference standard most commonly applied was calibrated for the wrong subspecies, and unit errors and methodological imprecision in supplier documentation make it impossible to know whether correct analysis was performed.

3.1 HOW SPECIES IDENTITY IS VERIFIED: GAS CHROMATOGRAPHY

The definitive method for verifying the species identity of a shea butter sample is gas chromatography (GC) analysis of its fatty acid methyl ester (FAME) composition. GC separates the individual fatty acids present in the fat and measures their relative proportions by weight. The resulting fatty acid profile is then compared against reference ranges for the claimed species.

Because the fatty acid profiles of ssp. *nilotica* and ssp. *paradoxa* differ in a consistent, documented, and species-characteristic pattern, Nilotica being oleic-dominant, *paradoxa* being stearic-dominant, GC analysis can, in principle, reliably distinguish between the two subspecies. A sample with oleic acid at 57–65% and stearic acid at 30–32% is consistent with Nilotica (CBI, 2026). A sample with stearic acid at 40–46% and oleic acid at 43–47% is consistent with West African *paradoxa* (CSJ, 2024, citing Maranz et al., 2004). The two profiles do not overlap in their characteristic ranges. In practice, however, GC analysis only accomplishes species verification if three conditions are met: (1) the correct analytical method is applied; (2) the resulting profile is compared against the correct species-specific reference standard; and (3) the documentation of the analysis is precise enough to confirm that both conditions were satisfied. Current supplier documentation in the Nilotica shea market routinely fails on all three counts.

There is a fourth condition that current practice almost universally ignores: independence. GC analysis commissioned and paid for by the supplier, or by a contracted laboratory the supplier selects, operates within an incentive structure that favors passing results. The analysis may be technically correct and still represent the supplier's best-case sample rather than a representative draw from the shipment batch. For species verification to function as a genuine substantiation mechanism rather than a procedural formality, GC fatty acid analysis should be commissioned by the buyer independently, not accepted from the supplier as a pre-packaged deliverable. Buyers commissioning independent GC analysis should specify AOCS Ce 1h-05 directly to an accredited fats and oils laboratory, the AOCS maintains a directory of certified laboratories at aocs.org, and should treat the resulting profile as the authoritative species verification record for that shipment, cross-referenced against but not replaced by any supplier-provided COA. The independence of the analytical relationship is what makes the result verifiable rather than merely represented.[2]

The multi-country work by Di Vincenzo et al. (2005) employed high-resolution gas chromatography to distinguish triglyceride species and triterpenes by geographic origin; the present documentation framework extends that analytical logic to contemporary supply chains by combining UNBS origin testing with ISO 17025-accredited GC fatty acid analysis for each verified Nilotica batch. As long as no single institution combines accredited origin testing with an appropriately validated GC fatty acid composition method for shea, this two-laboratory sequence is the structurally correct approach; if that institutional landscape changes, the same species-verification logic can be implemented within one laboratory or across two, depending on buyer risk tolerance.

3.2 THE METHOD PROBLEM: AOCS CE 1H-05 VS. CE 1J-07

AOCS Ce 1h-05: The Correct Method for Vegetable Oils

AOCS Official Method Ce 1h-05 is titled "Determination of *cis*- and *trans*-Fatty Acids in Vegetable or Non-Ruminant Animal Oils and Fats by Capillary GLC." This is the appropriate method for shea butter analysis. Shea butter is a vegetable fat. Ce 1h-05 uses capillary gas-liquid chromatography conditions (column type, temperature program, carrier gas parameters) optimized for the fatty acid methyl esters present in plant-derived fats. When correctly applied with appropriate reference standards, Ce 1h-05 produces a fatty acid profile that is directly comparable to published Nilotica reference ranges.

AOCS Ce 1j-07: The Wrong Method

AOCS Official Method Ce 1j-07 is titled "Determination of *cis*- and *trans*-Fatty Acids in Dairy and Ruminant Fats by Capillary GLC." This method is designed for butter, lard, tallow, and other animal-derived fats that contain odd-chain and branched-chain fatty acids that are not present in vegetable fats. Its column conditions and reference standards are calibrated for ruminant fat composition.

CRITICAL: METHOD SPECIFICATION

A supplier document that cites AOCS Ce 1j-07 for shea butter fatty acid analysis has applied a ruminant fat method to a vegetable fat. The results are not comparable to published Nilotica reference ranges. A U.S. formulator who receives a COA citing Ce 1j-07 cannot use that document to verify subspecies identity.

The correct method to specify when requesting fatty acid composition analysis of shea butter is **AOCS Ce 1h-05**. For free fatty acids / acid value: **AOCS Ca 5a-40**. For iodine value: **AOCS Cd 1d-92** (or calculated equivalent AOCS Cd 1c-85 from Ce 1h-05 results). For saponification value: **AOCS Cd 3-25**.

3.2A ANALYTICAL METHODS: ORIGINILOTICA CORE PANEL

Analytical verification for Originilotica batches is performed by an independent laboratory operating under ISO/IEC 17025:2017 accreditation for oils and fats. Fatty acid composition is determined using an ISO/IEC 17025:2017-accredited GC-FAME procedure that has been validated by the laboratory for accurate quantification of C18:0 (stearic acid) and C18:1n9 (oleic acid) at the concentrations typical of shea butter. This procedure follows internationally recognized approaches for fatty acid profiling of edible oils and fats and is applied under the standard five-parameter Originilotica panel.

In addition to fatty acid composition, each Originilotica batch is tested for acid value, peroxide value, iodine value, and saponification value using accredited procedures appropriate for vegetable oils and fats. Together, these five parameters provide a consistent fingerprint of the Nilotica shea matrix and allow comparison to published reference ranges for shea butter, as well as ongoing monitoring of oxidative status and processing quality. All five results are reported on a single Certificate of Analysis per sample, with values expressed to at least one decimal place where appropriate.

Every Certificate of Analysis is linked to the corresponding Originilotica batch through client-assigned identifiers, including a Burgess Origin Co batch ID and any applicable regulatory or national reference numbers. Analytical records and underlying raw data are retained by the accredited laboratory, with Burgess Origin Co maintaining copies of Certificates of Analysis and acting as the primary retrieval point for Originilotica batch documentation, supporting long-term traceability, auditability, and supply-chain documentation for Originilotica batches.

3.3 THE REFERENCE STANDARD PROBLEM: THE ABSENCE OF A CODEX STANDARD FOR SHEA BUTTER

Even when the correct analytical method is applied, species verification requires comparison against the correct reference standard. The reference standard problem for Nilotica shea butter operates at a more fundamental level than miscalibration, shea butter does not appear as a named vegetable oil in Codex Alimentarius Standard CXS 210-1999 (the Standard for Named Vegetable Oils), the primary international reference for fatty acid composition of edible vegetable fats. There is no Codex-level fatty acid composition specification for shea butter of either subspecies.

This finding was verified directly against the FAO-published version of CXS 210-1999 (as amended through 2024). Table 1 of that standard, which establishes fatty acid composition ranges for named vegetable oils, does not include an entry for *Vitellaria paradoxa* or *Vitellaria nilotica* in any form.[3]

Why This Absence Matters

Because shea butter lacks a Codex fatty acid entry, laboratories evaluating shea butter for species identity have no internationally standardized composition table to reference. Some published literature cites broader general ranges for unrefined shea butter, stearic acid approximately 25–50%, oleic acid approximately 32–62%, derived from aggregated analysis of both subspecies across the shea belt. These ranges are too broad to distinguish ssp. *nilotica* from ssp. *paradoxa*: a West African *paradoxa* sample with 44% stearic and 45% oleic falls within the aggregated range, as does a Nilotica sample with 31% stearic and 62% oleic. The subspecies cannot be differentiated using ranges that encompass both.

> **SCOPE CLARIFICATION**
>
> Important analytical distinction: The absence of shea butter from Codex STAN 210 does not affect the substantiation position of sellers making general “shea butter” claims. West African *paradoxa* is extensively characterized in peer-reviewed literature with well-established fatty acid ranges, and a general shea butter claim backed by GC analysis using appropriate literature reference ranges is adequately substantiated. The Codex gap matters specifically and exclusively for subspecies distinction claims, the verification of Nilotica identity specifically.

PARAMETER	WEST AFRICAN PARADOXA RANGE (CSJ 2024)	NILOTICA RANGE (CBI 2026)	DIAGNOSTIC SIGNIFICANCE
Stearic acid (C18:0)	40–46%	30–32%	Nilotica stearic lower, does not overlap with *paradoxa*
Oleic acid (C18:1)	43–47%	57–65%	Nilotica oleic higher, does not overlap with *paradoxa*
Palmitic acid (C16:0)	3–5%	4–5%	Within range for both, not diagnostic
Linoleic acid (C18:2)	6–8%	5.5–6.5%	Minor overlap, not primary diagnostic parameter

Table 4. Comparative fatty acid profiles: West African ssp. paradoxa vs. Nilotica ssp. nilotica. Sources: CSJ Uganda Shea Market Study (2024) citing Maranz et al. (2004); CBI (2026).

3.4 HOW THE UNBS IDENTIFIED AND RESPONDED TO THIS PROBLEM

The Uganda National Bureau of Standards is the institution closest to the Nilotica shea supply chain, with the deepest primary data on actual product composition. Its response to the reference standard problem is instructive and directly relevant to the documentation framework described in Section 4.

CSJ Table 6: The Standard vs. Reality

The CSJ Uganda Shea Market Study (2024) reproduces comparative data from UNBS laboratory analyses of Nilotica samples against the parameters of US EAS 967-1:2022, the governing Ugandan standard for shea butter for cosmetic use. The comparison reveals specific findings about how the standard performs against actual Nilotica products.

PARAMETER	UNBS LIMIT	MEAN (LAB)	RANGE	CSJ ASSESSMENT
Moisture content (%m/m max)	0.2 (pure)	0.08	0.01–0.10	High Quality
Peroxide value (mEq/kg max)	10	3.10	0.94–4.58	High Quality
Free fatty acid (% oleic max)	7.50	3.65	0.55–7.37	Good Quality
Acid value (mgKOH/g max)	15	0.22	0.01–1.21	Limit too permissive
Iodine value (min for pure)	>6	3.11	1.70–7.16	Floor too high for Nilotica
Saponification value (mgKOH/g)	170–190	183	181–185	Normal Quality

Table 5. UNBS EAS 967-1:2022 standard limits vs. actual Nilotica laboratory analyses. Green: parameters where Nilotica performs well. Amber: calibration problems (acid value ceiling too permissive; iodine value floor too high). Source: CSJ Uganda Shea Market Study (2024), Table 6.

The CSJ notation that the acid value standard and iodine value standard are “too high” for Nilotica refers to two distinct technical problems. For acid value, the maximum ceiling of 15 mgKOH/g is too permissive: it allows product at nearly 70 times the typical acid value of quality Nilotica butter to pass. For iodine value, the minimum floor of >6 is set too high relative to what quality Nilotica product consistently achieves, the UNBS laboratory mean of 3.11 falls below this floor, meaning well-processed Nilotica butter would fail this parameter. These are distinct calibration failures requiring distinct responses.[4]

3.5 THE GC FATTY ACID COMPOSITION GAP IN CURRENT UNBS TESTING

The GC gap in UNBS testing has two independent structural causes that are frequently conflated but must be understood separately. The first is an analytical chemistry infrastructure event with no connection to Nilotica or shea butter. ISO 5508:1990, the packed-column gas chromatography method that UNBS previously used for fatty acid composition testing of vegetable fats, was withdrawn globally in 2014 as the analytical chemistry field transitioned from packed to capillary column instrumentation. The replacement standard, ISO 12966-4:2015, requires a fundamentally different instrument class: a 100-meter highly polar cyanopropylsilicone capillary column (such as CP-Sil 88 or SP-2560), which is not interchangeable with the packed-column hardware the prior method used. These columns require separate carrier gas configurations, derivatization protocols, and calibration standards. EAS 967-1:2022 was developed in the post-withdrawal period and does not include a GC fatty acid composition parameter, in part because the instrumentation transition had not yet been resolved at the testing facilities serving the Ugandan shea sector. This was a global event affecting all vegetable fat standards work; its consequence for Nilotica shea testing was incidental to its cause.

The second cause operates independently of the first. As of the date of this white paper, no ISO 17025 accredited commercial laboratory in Uganda offers FAME analysis of vegetable fats as a validated, accredited testing service under ISO 12966-4 or AOCS Ce 1h-05. This gap was verified across the full scope of Uganda’s testing infrastructure: UNBS Bweyogerere, Chemiphar Uganda (the country’s leading ISO 17025 accredited private laboratory, accredited under BELAC), the Uganda Industrial Research Institute, the Directorate of Government Analytical Laboratories, the Natural Chemotherapeutics Research Institute, and others. GC instrumentation does exist at several of these institutions. UNBS Bweyogerere and the Directorate of Government Analytical Laboratories acquired GC capability through IAEA and FAO capacity-building programs; Chemiphar holds BELAC-accredited GC-MS/MS instrumentation. In every case, that

instrumentation is configured and accredited for pesticide and veterinary drug residue screening, organochlorine and organophosphate detection requiring mid-polarity columns, contaminant-specific calibration standards, and accreditation scope that does not extend to vegetable fat matrices. That application is analytically distinct from FAME analysis, which requires the 100-meter highly polar capillary column technology, separate derivatization protocols, and its own independent accreditation scope. No institution in Uganda has validated or currently offers FAME analysis of vegetable fat matrices as a commercial, accredited, per-shipment testing service. The gap is not one of equipment alone; it is one of method validation, accreditation scope extension, and commercial test menu.

A third factor compounds both: the absence of formally adopted Nilotica-specific pass/fail limits in EAS 967-1:2022, addressed in Section 3.3. Even if the instrumentation and accreditation existed, a government laboratory requires defined pass/fail limits to issue a compliant result under a named standard. All three factors are independent. None resolves by addressing the others.

The consequence for verified Nilotica documentation is the two-laboratory sequential model described in this white paper. UNBS executes what it is equipped and accredited to perform: moisture content, acid value, and peroxide value against EAS 967-1:2022, producing government-assigned sample numbers that are independently verifiable, non-transferable, and permanently on record. GC fatty acid composition analysis runs to a U.S. laboratory operating under ISO 17025 accreditation with AOCS Ce 1h-05 method scope, producing the subspecies identity verification that no Uganda-based laboratory currently can. The two-laboratory chain is not a workaround. It is the structurally correct approach given the current state of Uganda's testing infrastructure: each institution performs what it is equipped and accredited to do, and the resulting documentation is independently verifiable at two separate institutional nodes across two jurisdictions. UNBS establishes origin. The U.S. accredited laboratory establishes subspecies identity. Together they answer the two questions every serious buyer will ask, where did this come from, and how do we know it is actually Nilotica, in a form that no single-laboratory result from any current Uganda institution could produce.

The gap is further reinforced at the INCI nomenclature level. Both *Vitellaria paradoxa* ssp. *nilotica* and ssp. *paradoxa* currently share the INCI designation *Butyrospermum Parkii* (Shea) Butter. There is no distinct INCI name that separates Nilotica from West African *paradoxa* in the ingredient naming system used on cosmetic labels and in formulation documentation. This means that the ingredient naming system itself does not make the subspecies distinction, and that government laboratory testing producing GC fatty acid composition data is not merely a documentation best practice but the only reliable mechanism by which Nilotica identity can be verified at all.

This conflict is categorically more severe than other known INCI naming conflicts in the cosmetic industry. Glycerin sourced from animal tallow and glycerin sourced from vegetable oil share the same INCI designation, but the molecule is chemically identical regardless of origin. Squalane derived from shark liver oil and squalane derived from sugarcane share the same INCI designation, same molecule, same performance, ethical differentiation only. The Nilotica–*paradoxa* conflict operates differently. These are two chemically distinct materials, one oleic-dominant with a melting point of 25–30°C, one stearic-dominant with a melting point of 34–38°C, that perform differently in a formula, behave differently at skin temperature, and cannot be substituted for each other without reformulation. The INCI system's failure to distinguish them is not merely a transparency problem. It is a functional misidentification that allows two ingredients with measurably different performance profiles to occupy the same legal name, creating formulation risk that no amount of ethical sourcing documentation resolves.

Future single-laboratory potential. If, in a later phase, the Uganda National Bureau of Standards or another Ugandan ISO 17025-accredited laboratory validates and accredits a GC fatty acid composition panel for shea butter using the correct capillary column method and Nilotica-specific reference ranges, a single-institution verification pathway would become technically possible. In that scenario, origin, quality parameters, and subspecies identity could, in principle, be documented under one roof. Buyers may still prefer to maintain a two-jurisdiction chain for independence and redundancy, but the minimum viable architecture would shift from structurally required two-laboratory sequencing to a choice between one-lab and two-lab verification models.

3.6 WHAT CORRECT DOCUMENTATION LOOKS LIKE: A COMPOSITE EXAMPLE

The following documentation red flags are drawn from MSDS documents currently in circulation in the U.S. Nilotica shea market. They are presented as a composite example representing patterns observed across multiple supplier documents rather than as an assessment of any single supplier.

> **RED FLAG 1: "COLD PRESSED" CLAIMS**
>
> "Cold pressed" claims on Nilotica shea are not technically supportable under documented Ugandan processing conditions. The CSJ (2024) states explicitly that no current shea butter extraction method can claim cold pressed status because processing temperatures exceed 50°C. Cold pressing is universally defined as processing below 49°C. Correct terminology: "mechanically expeller pressed." Request temperature documentation before accepting any cold pressed designation.

Organic as Optional, Not Defining

Organic and fair-trade certification can add margin and improve buyer access in certain channels, and both reflect real commitments that some purchasers rightly value. Neither, however, verifies subspecies identity or, by itself, substantiates a "Nilotica shea butter" claim. A USDA Organic certificate confirms agricultural practice at origin; it says nothing about whether the fatty acid profile is oleic-dominant at 57–65% or stearic-dominant at 40–46%. A fair-trade mark confirms social sourcing standards; it does not distinguish *Vitellaria paradoxa* ssp. *nilotica* from ssp. *paradoxa*. As already established in this section, major certification schemes do not resolve the subspecies question and can sit atop mislabelled product without triggering any alert. The FTC and MoCRA substantiation framework discussed in Sections 5.3 through 5.5 reinforces this point: legal defensibility of "Nilotica" claims depends on GC fatty acid analysis and batch-linked government laboratory data, not on certification logos.

The structural drivers of the documented Nilotica premium are chemotype and verifiable documentation: the oleic-dominant fatty acid profile (oleic 57–65%, stearic 30–32%), the lower melting point (25–30°C), superior skin penetration, and the formulation and sensorial performance that follow. Confirming those attributes requires UNBS government chemistry and microbiology reports (Tier 1 in the documentation hierarchy, Table 10, Section 5.1) and independent GC fatty acid analysis using AOCS Ce 1h-05 evaluated against Nilotica-specific reference ranges (Tier 2). Organic and fair-trade certification occupies Tier 3, described in Table 10 as a document that "does not verify species identity. A certified *paradoxa* product carries the same certification as certified Nilotica." European development intelligence from GIZ and CBI, discussed in Section 2, frames the Nilotica value proposition around chemotype, origin, and traceability; certification is identified as one of several optional competitive levers, not the commercial foundation.

None of this argues against certification. Organic and fair-trade marks serve real commercial functions for buyers who require them, and nothing in this standard precludes layering those credentials on top of the Originilotica verification architecture. Certification is additive, not foundational. Legal and commercial defensibility in the U.S. market begins with government laboratory documentation and GC species verification; organic and fair-trade marks are optional secondary layers for buyers who require them.

RED FLAG 2: SAPONIFICATION VALUE IN WRONG UNITS

Saponification value for fats and oils is universally expressed in milligrams of potassium hydroxide per gram of fat (mgKOH/g). A document listing this parameter in mg/kg is dimensionally incorrect and cannot be compared against published reference values. The correct range for pure Nilotica shea butter per UNBS EAS 967-1:2022 is 170–190 mgKOH/g.

RED FLAG 3: GC METHOD CITED AS AOCS CE 1J-07

Ce 1j-07 is the ruminant fat method, designed for dairy butter, lard, and tallow. It is not valid for shea butter analysis. Results from Ce 1j-07 analysis cannot be compared against Nilotica reference ranges. The correct method is AOCS Ce 1h-05. Request a corrected analysis from a laboratory applying Ce 1h-05 before accepting any species-of-identity claims.

RED FLAG 4: MELTING POINT INCONSISTENCY WITHIN A SINGLE DOCUMENT

Nilotica shea butter has a melting point of 25–30°C. A document that lists different melting point values in different sections has not been reviewed for internal consistency and may be drawing from templates calibrated for a different product type.

RED FLAG 5: FATTY ACID PROFILE INCONSISTENT WITH NILOTICA

Any GC analysis showing stearic acid (C18:0) above 36% or oleic acid (C18:1) below 55% is inconsistent with *Vitellaria paradoxa* ssp. *nilotica*. The documented Nilotica reference ranges, oleic 57–65%, stearic 30–32% (CBI 2026), should be treated as the acceptance criteria for any GC analysis claimed to verify Nilotica identity.

3.7 RECOMMENDED MARKET SAMPLING FOR VERIFICATION

A practical next step for the Nilotica market is an anonymous sampling of commercially available products and bulk materials labeled as “Nilotica,” “Shea Nilotica,” or “East African Nilotica shea butter” from multiple suppliers and channels, followed by independent gas chromatography fatty acid analysis using AOCS Official Method Ce 1h-05. Comparing the resulting fatty acid profiles to documented Nilotica reference ranges for oleic and stearic acid, and to established West African *paradoxa* ranges, would allow buyers and regulators to quantify how closely current Nilotica claims align with analytically verifiable subspecies identity. This white paper does not report such a study; it proposes the design and analytical framework under which that work should be conducted and interpreted, and the criteria against which any resulting data should be evaluated.

SECTION 4

The Primary Source Documentation

GOVERNMENT LABORATORY VERIFICATION: WHAT IT IS AND WHY IT MATTERS

When a U.S. cosmetic ingredient buyer receives a Certificate of Analysis from a supplier, that document is typically produced by the supplier or a contracted third-party laboratory selected and paid by the supplier. The chain of accountability runs from the supplier outward, the document is, in effect, self-graded. The incentive structure favors passing results. Government laboratory testing operates differently.

The Uganda National Bureau of Standards (UNBS) is Uganda's statutory national standards body, responsible for quality assurance across imported and exported goods. The UNBS Mbale Regional Laboratory (located at Bugwere Road, Plot 1-3, Mbale) conducts independent analysis of submitted samples against published national standards. The client submits the sample and pays for analysis. UNBS has no commercial relationship with the outcome. The standard applied to shea butter for cosmetic use in Uganda is US EAS 967-1:2022, titled *Butter for Cosmetic Use (Specification) Part 1: Shea Butter.*

WHY GOVERNMENT TESTING MATTERS

A UNBS laboratory report does not tell you what the supplier wants you to see. It tells you what the standard requires and whether the sample met it, under the signature of a government technical signatory accountable to the UNBS Executive Director. For a commodity where adulteration and mislabeling are documented at scale, the difference between a supplier-produced COA and a government-issued laboratory report is not a procedural nuance. It is the difference between a claim and a verification.

4.2 CHEMISTRY REPORT: DECEMBER 2025 (FA/2025/13316)

Test Report No. FA/2025/13316 was issued by the UNBS Mbale Regional Laboratory for sample number L/7202/2025MC, submitted by the supplier for testing. The sample was received at the laboratory on December 9, 2025. Analysis commenced December 10 and was completed December 12, 2025. Sample description as recorded: "Shea butter for cosmetic industry, supplier brand designation withheld, report number and sample number independently verifiable with UNBS Mbale Regional Laboratory", 2 × 500g, received in sealed containers. Analysis conducted under UNBS technical signatory authority.

Analysis was conducted under four applied standards: US EAS 967-1:2022 (governing standard for shea butter for cosmetic use); US ISO 662 (moisture content and volatile matter); US ISO 3960 (peroxide value); and US ISO 660 (acid value).

PARAMETER	RESULT	SPECIFICATION LIMIT	STATUS
Moisture content and volatile matter (%m/m)	0.06	≤0.2 maximum	**PASS**

PARAMETER	RESULT	SPECIFICATION LIMIT	STATUS
Acid value (mgKOH/g)	17.7	≤15 maximum	FAIL
Peroxide value (mEq/kg)	3	≤10 maximum	PASS

Table 6. UNBS Test Report FA/2025/13316: Chemistry results, December 2025 batch. Standard: US EAS 967-1:2022.

Two of the three parameters passed. Moisture content at 0.06% was well within the 0.2% maximum. The peroxide value at 3 mEq/kg was well within the 10 mEq/kg limit, indicating no meaningful oxidation. The acid value of 17.7 mgKOH/g exceeded the specification maximum of 15 mgKOH/g by 2.7 units, a quality condition specific to this batch attributable to enzyme activity during nut storage, elevated moisture during processing, excessive heat exposure, or extended time between processing and testing. The failure does not indicate contamination or adulteration.

The report cross-references the microbiology report explicitly: “THIS TEST REPORT, FA/2025/13316, IS INCOMPLETE WITHOUT MICROBIOLOGY LABORATORY RESULTS FOR THE SAME SAMPLE NUMBER, L/7202/2025MC.” This is standard UNBS procedure, chemistry and microbiology reports for a single sample are designed to be read together as a complete documentation package.

4.3 CHEMISTRY REPORT: JANUARY 2026 RETEST (FA/2026/00807)

Test Report No. FA/2026/00807 was issued for sample number L/0157/2026C, submitted from the supplier’s Northern Uganda facility. The sample was received on January 22, 2026. Analysis ran from January 28 to January 29. Sample: “Shea butter for cosmetic industry, supplier brand designation withheld, report number and sample number independently verifiable with UNBS Mbale Regional Laboratory”, 1 × 200g, sealed container. Analysis conducted under UNBS technical signatory authority, dated January 30, 2026. Co-signatory for UNBS Executive Director dated February 2, 2026.

PARAMETER	RESULT	SPECIFICATION LIMIT	STATUS
Acid value (mgKOH/g)	1.2	≤15 maximum	PASS

Table 7. UNBS Test Report FA/2026/00807: Chemistry retest results, January 2026 batch. Standard: US EAS 967-1:2022. Method: US ISO 660 (acid value only, sole parameter from the prior failed batch).

The acid value of 1.2 mgKOH/g represents a result not merely within specification but at the premium end of the quality range. CSJ (2024) laboratory data documents a mean acid value of just 0.22 mgKOH/g across analyzed Nilotica samples, against a standard maximum of 15 mgKOH/g, placing 1.2 mgKOH/g firmly within the well-processed Nilotica range.

THE 93% REDUCTION: WHAT IT DEMONSTRATES

The gap between the December 2025 result (17.7 mgKOH/g) and the January 2026 retest (1.2 mgKOH/g) represents a 93% reduction in free fatty acid content between the flagged batch and the verified batch. [(17.7 − 1.2) ÷ 17.7 = 93.2%]. This magnitude confirms the December failure was batch-specific, attributable to a condition in that particular batch's nut quality, storage duration, or processing timing, rather than a systemic deficiency. The January batch is genuinely premium-grade material verified by the same independent government laboratory that identified the original issue. Most suppliers would never show a buyer a failed test result. The complete documentation arc (failure, correction, and independent verification) is the case for traceable sourcing made concrete.

4.4 MICROBIOLOGY REPORT: DECEMBER 2025 (ML/2025/08149)

Test Report No. ML/2025/08149 was issued for sample number L/7202/2025MC, the same sample as the December 2025 chemistry report. The microbiology analysis is conducted by a separate UNBS laboratory under separate analyst signatories, providing an independent layer of verification within the same submission. The sample was received December 8, 2025, one day before the chemistry laboratory received it, indicating simultaneous submission of split portions to both laboratories. Analysis ran from December 11 to December 15, 2025. Six ISO methods were applied: ISO 21149 (total aerobic microbial count), ISO 22717 (*Pseudomonas aeruginosa*), ISO 22718 (*Staphylococcus aureus*), ISO 4831 (total coliforms), ISO 16212 (yeast and mould count), and ISO 18416 (*Candida albicans*).

PARAMETER	RESULT	SPECIFICATION LIMIT	STATUS
Total plate count (cfu/g)	<10	≤100 maximum	**PASS**
Pseudomonas aeruginosa (per g)	Not detected	Not detectable	**PASS**
Staphylococcus aureus (per g)	Not detected	Not detectable	**PASS**
Total coliforms (per g)	Not detected	Not detected	**PASS**
Yeast and moulds (cfu/g)	<10	≤100 maximum	**PASS**
Candida albicans (per g)	Not detected	Not detectable	**PASS**

Table 8. UNBS Test Report ML/2025/08149: Microbiology results, December 2025 batch. Standard: US EAS 967-1:2022. All 6 parameters passed.

Every microbiology parameter passed. *Pseudomonas aeruginosa* and *Staphylococcus aureus* are the two organisms that cosmetic regulatory frameworks most consistently require manufacturers to test against. Their absence, documented under ISO 22717 and ISO 22718 respectively, is directly relevant to a U.S. formulator's ingredient safety file under MoCRA.

4.5 THE COMPLETE DOCUMENTATION STRUCTURE

The three UNBS reports together constitute a documentation package with a specific internal logic. The chemistry report (FA/2025/13316) and the microbiology report (ML/2025/08149) share a sample number, L/7202/2025MC, and are explicitly cross-referenced on each document as incomplete without the other. The January 2026 retest (FA/2026/00807,

sample L/0157/2026C) is a separate submission, a new sample drawn from a corrected batch, assigned a new government sample number, tested on the sole parameter that had previously failed.

REPORT NO.	TYPE	SAMPLE NO.	COMPLETED	RESULT
FA/2025/13316	Chemistry	L/7202/2025MC	Dec 12, 2025	**FAIL: Acid Value 17.7 mgKOH/g (max 15)**
ML/2025/08149	Microbiology	L/7202/2025MC	Dec 15, 2025	**PASS: All 6 parameters**
FA/2026/00807	Chem (Retest)	L/0157/2026C	Jan 29, 2026	**PASS: 1.2 mgKOH/g (max 15)**

Table 9 (Appendix A). UNBS Laboratory Documentation Package. Laboratory: UNBS Mbale Regional Office, Bugwere Road, Plot 1-3, P.O. Box 358, Mbale, Uganda. Tel: 0417333250. Standard applied: US EAS 967-1:2022.

Buyers who receive UNBS reports as part of supplier documentation should confirm that the report number and sample number on the document correspond to an active submission in the UNBS laboratory record. A supplier whose documentation cannot survive direct contact verification with the issuing government laboratory is not providing verified documentation, they are providing a document that resembles verified documentation. That distinction is precisely what the UNBS government sample number system was designed to make detectable.

4.6 BATCH-LEVEL TRACEABILITY: THE COMMUNITY SOURCING STRUCTURE

This section illustrates, by example, how different layers of documentation, national standards-based testing, independent laboratory analysis, and batch-linked sourcing information, can be assembled into a coherent record for a Nilotica shea butter supply chain. The examples are descriptive rather than exhaustive and are intended to show the types of documents and linkages that give buyers greater confidence, not to prescribe a particular workflow or to reveal all elements of Burgess Origin Co.’s internal systems.

The supply chain that produced these samples operates through a documented community sourcing framework that extends traceability upstream from the processing facility to the agricultural origin. Rather than relying on fragmented one-to-one agreements, Burgess Origin Co anchors its sourcing in a structured relationship with a Northern Uganda supplier that holds a formal Memorandum of Understanding with a voluntary association representing over 8,500 shea farmers. This MoU mandates the association to organize and supervise local agents and collectors, maintain and transmit documented purchase records for nuts supplied into the program, and cooperate in field visits to collection centers for quality assurance. A defined share of net profit from shea nut sales under this framework is earmarked for farmer-managed savings and enterprise funds, so the same structure that underpins community benefit also produces a continuous paper trail linking exported butter back to organized producer groups. Within this upstream structure, Burgess Origin Co’s own supply agreements specify that only nuts procured under the MoU framework and supported by these records are directed into Burgess Origin Co-designated processing runs, aligning community-level governance with the batch-level traceability and documentation requirements described in this section.

Aggregation from multiple collectors is not a documentation failure, it is the structural reality of every commercial shea supply chain operating at scale. Shea trees grow wild across communal land in dispersed concentrations; individual collectors harvest 50–200 kilograms per season; no commercially viable export operation sources from a single producer.

What distinguishes a documented sourcing structure from an undocumented one is the formality of the contracting relationship, the geographic specificity of the sourcing area, and whether per-harvest batch testing against a published standard produces government-assigned sample numbers that a buyer can independently verify.

In addition to community-level traceability, Burgess Origin Co works through a documented Memorandum of Understanding between its Northern Uganda supplier and affiliated producer cooperatives. Under this MoU, processors operate a closed, batch-segregated intake model: for each production run, only nuts sourced under the supplier–cooperative agreements are received, recorded, and processed; external or walk-in lots are not accepted into the line. Processors are required to maintain per-batch intake logs and to operate physical or procedural segregation between MoU-covered batches and any other client volumes. For every batch run, the supplier or its designated cooperative representative conducts on-site quality control checks at the processor level to confirm that only MoU-covered nuts enter the expeller and that the resulting butter is not mixed or commingled with product from other suppliers. Burgess Origin Co's documentation package incorporates these processor-level QC records alongside government laboratory reports and independent GC fatty acid analysis, so that batch-level traceability extends from community harvest through processing, testing, and export.

The finished butter is sent to UNBS on a one-harvest-one-submission basis, one government laboratory report per harvest batch. The UNBS-assigned sample number is assigned by the laboratory, not by the supplier, and it is not transferable to a different batch or a different submission. A supplier-produced Certificate of Analysis can be dated, reprinted, or reattached to a different batch. A UNBS government sample number cannot.

In the current implementation, batch-level oversight is exercised by the supplier at the processing facility to ensure that harvest batches submitted to UNBS are physically segregated from other shea streams before testing and export. This represents Phase 1 of the Originilotica framework: harvest-batch traceability anchored in government and independent laboratory documentation, with additional cooperative-level granularity under implementation with supplier partners.

SECTION 5

Implications for U.S. Ingredient Buyers

OPERATIONAL FRAMEWORK: DOCUMENTATION, REGULATION, AND SOURCING PRACTICE

The three preceding sections establish the problem, the research gap that allows it to persist, the analytical framework required to solve it, and a documented example of what verified supply chain documentation looks like in practice. This section translates that foundation into operational guidance for U.S. cosmetic formulators, ingredient buyers, and finished product brands. The documentation architecture described in Sections 3 through 5 has been formalized as the ***Originilotica*** *standard.*

ORIGINILOTICA: INTERNAL VERIFICATION FRAMEWORK

Originilotica is the name Burgess Origin Co. uses for its internal approach to verifying Ugandan Nilotica shea butter. The framework draws on the analytical and documentation principles described in this white paper: UNBS government laboratory reports for origin and quality, and independent GC fatty acid analysis from accredited laboratories for subspecies identity. The detailed technical criteria and any formal verification or licensing structures associated with this framework are governed by separate, internal documents and are not described in this publication.

5.1 THE DOCUMENTATION HIERARCHY: WHAT TO REQUIRE

Not all supplier documentation carries equal evidentiary weight. A buyer who treats a supplier-produced Certificate of Analysis as equivalent to a government laboratory report is making a category error that creates both quality and compliance risk.

TIER	DOCUMENT TYPE	WHAT IT VERIFIES	LIMITATION
1	UNBS government laboratory report (chemistry + microbiology)	Moisture, acid value, peroxide value, and 6 microbiology parameters against EAS 967-1:2022. Government-assigned sample number, non-transferable, and cannot be retroactively altered.	Does not currently include GC fatty acid composition, subspecies identity not confirmed by UNBS report alone.
2	GC fatty acid composition analysis (AOCS Ce 1h-05)	Fatty acid profile consistent with ssp. *nilotica* vs. ssp. *paradoxa*, the definitive species verification test.	Not currently part of the UNBS standard testing panel. Must be commissioned separately. For maximum evidentiary weight, commission by the buyer independently from an AOCS-certified laboratory rather than accepted from the supplier.
3	Organic or Fair-Trade certification	Agricultural practice at origin, sustainable harvesting, no prohibited inputs, social standards.	Does not verify species identity. A certified *paradoxa* product carries the same certification as certified Nilotica.
4	Supplier-produced COA	Supplier representation of product parameters. May cite third-party laboratory.	No government involvement. Incentive structure favors passing results. Cannot be cross-referenced against independent records.
5	Material Safety Data Sheet (MSDS)	Physical and chemical properties, handling and storage requirements.	Rarely independently verified. Unit errors are common (see Section 3.6). Must be cross-checked against UNBS reports.

Table 10. Documentation hierarchy for Nilotica shea butter verification, ranked by evidentiary weight.

5.2 THE PRACTICAL SOURCING FRAMEWORK: PHASE BY PHASE

> *The framework below reflects the Originilotica phased implementation model. Phase 1 represents the current implemented standard: harvest-batch traceability anchored in UNBS government laboratory reports and independent GC-FAME species verification. Phase 2, cooperative-level lot mapping with incentivized documentation, is under active implementation with supplier partners and is not yet a universal condition of all batches. Any mention of coop-level granularity below should be read in that context.*

A practical quality-control framework for Nilotica shea begins at the processor intake gate. Buyers should require their suppliers to operate under a written supplier–cooperative agreement that mandates closed, batch-segregated processing, documented intake of MoU-covered nuts only, and routine on-site checks by a supplier or cooperative representative at every production run. Those processor-level records should be integrated with government laboratory chemistry and microbiology reports and independently commissioned GC fatty acid analysis, so that each exported batch can be traced from specific community harvest lots through a defined processing run and a named set of analytical results. In this model, quality control is not a single test but a chain of verifiable events, each documented and cross-referenced at batch level.

Note: The phases below describe a buyer's procurement evaluation sequence, distinct from the Originilotica implementation phases described above.

PHASE 1: INITIAL SUPPLIER EVALUATION (BEFORE ANY PURCHASE)

- ☐ Most recent UNBS chemistry laboratory report: Test Report number, Sample number, date, parameters tested, results, and pass/fail status against EAS 967-1:2022.
- ☐ Corresponding UNBS microbiology laboratory report: same sample number as chemistry report, six-parameter panel, all passing.
- ☐ GC fatty acid composition analysis: AOCS Ce 1h-05 method, results showing oleic 57–65%, stearic 30–32%.
- ☐ MSDS: verify saponification value in mgKOH/g, melting point consistent with Nilotica (25–30°C), no unsupported cold pressed claim.

If the supplier cannot produce Tier 1 and Tier 2 documents (UNBS reports and GC analysis), they cannot verify what they are selling.

PHASE 2: ORDER CONFIRMATION (PER SHIPMENT)

- ☐ UNBS government laboratory reports issued for the specific harvest batch being shipped, not a previously issued report repurposed for a new shipment.
- ☐ Sample numbers on reports traceable to the shipment batch: confirm with supplier that the UNBS sample number corresponds to the product being shipped.
- ☐ COA cross-referenced against UNBS reports; parameter values on supplier COA should be consistent with government report results.

PHASE 3: INCOMING QUALITY CONTROL (UPON RECEIPT)

- ☐ Confirm physical properties consistent with documentation: appearance (off-white to pale yellow solid), odor (mild, nutty), texture (soft at ambient temperature, liquid below 30°C).

- [ ] Conduct or commission independent acid value and peroxide value testing for shipments large enough to warrant in-house verification.
- [ ] File all documentation (UNBS report numbers, sample numbers, COA, MSDS) against the specific lot received. This is your ingredient safety file under MoCRA.
- [ ] Account for shelf life and storage conditions in documentation timing. Properly stored Nilotica shea butter maintains quality parameters for approximately 24 months under cool, dark, oxygen-limited conditions. The acid value and peroxide value results in a UNBS report reflect the product at time of testing, not at time of receipt. Transit duration, temperature exposure during shipping, and warehouse storage conditions between testing and use all affect those parameters. Incoming quality control testing at receipt is therefore not redundant to the UNBS report, it is the verification checkpoint that confirms the product maintained its documented quality through the logistics chain. A UNBS report issued at harvest and a shipment received six months later are two data points in the same documentation record, not interchangeable substitutes for each other. This distinction is precisely why per-shipment UNBS testing is required rather than a single annual report applied across multiple shipments.

5.3 THE U.S. REGULATORY LANDSCAPE: MOCRA AND FTC

FDA Modernization of Cosmetics Regulation Act (MoCRA)

MoCRA, signed into law in December 2022 and implemented on a phased basis through 2023–2024, is the most significant expansion of FDA's authority over cosmetics since the Federal Food, Drug, and Cosmetic Act. Key provisions relevant to Nilotica shea butter sourcing include: (1) a safety substantiation requirement, responsible persons must ensure that cosmetic products are adequately substantiated for safety, requiring documentation of ingredient quality and safety; (2) facility registration and product listing requirements, which apply to cosmetic manufacturers and contract manufacturers in the supply chain; and (3) serious adverse event reporting obligations. A clean UNBS microbiology report (six parameters, all passing, using ISO international methods) is precisely the ingredient-level safety documentation that supports MoCRA compliance. A supplier-produced COA without government laboratory backing does not establish the same independently verifiable evidentiary basis as a government-issued laboratory report, and may not provide equivalent documented substantiation for MoCRA compliance purposes.[5]

FTC Act: Ingredient Origin and Species Claims

The Federal Trade Commission Act prohibits unfair or deceptive acts or practices in commerce. The controlling standard is substantiation, not knowledge of falsity: a brand making a species-specific claim, "Nilotica shea butter," "100% pure Nilotica," or an East African geographic origin claim, must have competent and reliable evidence supporting that claim at the time it is made. If the ingredient is *paradoxa* and no species verification documentation exists, the claim is unsubstantiated regardless of intent. The species distinction between Nilotica and West African *paradoxa* is objectively testable through GC analysis. A brand whose supply chain cannot produce that test result, and whose ingredient does not meet Nilotica reference ranges, carries FTC exposure that the documentation gap enables. Importantly, this exposure is not created by the absence of a Codex standard; it exists because the brand cannot substantiate a specific factual claim it is making in commerce.

5.4 IMPLICATIONS FOR CURRENT “NILOTICA” BRAND CLAIMS

The implications of a documentation-driven standard for Nilotica shea butter extend beyond primary ingredient buyers to any company whose products or marketing materials use the language of “Nilotica,” “Shea Nilotica,” or “East African Nilotica shea butter.” Any brand, wholesaler, or private-label supplier invoking these terms is, in effect, making a subspecies-of-origin claim that is analytically testable and commercially material.

Under the framework outlined in this white paper, such claims move from aspirational positioning into the domain of substantiation. A cosmetic ingredient buyer or finished-goods brand that advertises Nilotica shea without holding batch-linked GC fatty acid profiles, correctly specified to AOCS Ce 1h-05 and interpreted against Nilotica-specific reference ranges, cannot demonstrate that its product is in fact Nilotica rather than West African *paradoxa* or a mixture of the two. The introduction of an Originilotica-style documentation standard therefore raises the evidentiary bar for all market participants using Nilotica language, regardless of size or channel, by reclassifying a previously unverified marketing term as a verifiable, and verifiably enforceable, species-of-origin claim.

5.5 ENFORCEMENT TRAJECTORY

Regulatory enforcement is already moving in the direction this documentation standard anticipates. The Federal Trade Commission’s treatment of “all natural” and composition claims, and the FDA’s new records-access and safety-substantiation powers under the Modernization of Cosmetics Regulation Act, both point toward a cosmetic market where ingredient-level origin and composition claims must be supported by laboratory data and traceable records rather than marketing language alone. There is, at present, no Codex or U.S. federal identity standard for Nilotica shea butter specifically, but the evidentiary tools required to scrutinize Nilotica claims already exist; the Originilotica standard simply aligns a Nilotica supply chain with the level of documentation that future enforcement trends make increasingly non-optional.

> **RISK TO INSUREDS: MISLABELING, FALSE ADVERTISING, AND MOCRA**
>
> From an insurance perspective, undocumented Nilotica claims expose brands on three fronts simultaneously. First, mislabeling or failure to conform to advertised composition is a classic product liability trigger, and MoCRA’s expanded recordkeeping and recall framework increases the regulatory and financial stakes when ingredient identity cannot be proven. Second, coverage for “advertising injury” and false-advertising claims under standard liability policies is often limited or excluded where the allegation is knowing misrepresentation or failure of the product to meet advertised quality, leaving brands to fund their own defense if a competitor or regulator challenges “100% Nilotica” claims. Third, weak ingredient documentation and batch-level traceability complicate both claims handling and renewal underwriting, as insurers increasingly expect cosmetic brands to demonstrate credible safety substantiation and traceable supply chains. A Nilotica supplier that can produce government laboratory reports, method-specified fatty acid analysis, and batch-level traceability therefore reduces not only regulatory and competitive risk for its buyers but also the likelihood of insurance coverage disputes when something goes wrong.

SECTION 6

Conclusion and Recommendations

A SOLVABLE MARKET FAILURE: THE PATH TO A VERIFIED U.S. MARKET

6.1 SUMMARY OF FINDINGS

This white paper has documented a specific and solvable market failure. The U.S. cosmetic ingredient market is paying a documented 2–5× premium for *Vitellaria paradoxa* ssp. *nilotica* shea butter from East/Central Africa over West African *paradoxa*, a premium justified by real differences in fatty acid profile, formulation performance, and supply chain origin. That premium cannot currently be verified through any systematic documentation standard available to U.S. ingredient buyers. The findings across six sections converge on four conclusions.

First, the species distinction is real and analytically verifiable. Nilotica and West African *paradoxa* have categorically different fatty acid profiles (oleic dominant vs. stearic dominant) that can be confirmed through GC analysis using AOCS Ce 1h-05 and Nilotica-specific reference ranges. The verification tool exists. The problem is that it is not being systematically applied in the U.S. supply chain.

Second, the research gap is structural, not incidental. European governments (GIZ, CBI) have produced institutional market intelligence that gives European buyers verified reference parameters. No U.S. government agency, academic institution, or industry body has produced an equivalent document, to the author's knowledge. The first practitioner-researcher with primary source access who fills this gap defines the U.S. market standard.

Third, the analytical problem is specific and correctable. Wrong method (Ce 1j-07 instead of Ce 1h-05), no Codex fatty acid composition standard for shea butter of any subspecies, unit errors in supplier documents, and unsupported cold pressed claims are all correctable through documentation discipline. Section 3 provides the framework. Section 5 provides the buyer checklist.

Fourth, government laboratory verification is operational and available. The Uganda National Bureau of Standards Mbale Regional Laboratory issues government-signed, sample-number-anchored laboratory reports against EAS 967-1:2022 that provide independently verifiable chemistry and microbiology documentation at the batch level. This infrastructure exists. What is missing is a U.S. import supply chain that deploys it systematically.

6.2 RECOMMENDATIONS

For U.S. Cosmetic Formulators and Ingredient Buyers

Require UNBS government laboratory reports (chemistry and microbiology) as a baseline for any Nilotica shea butter procurement. Supplier-produced COAs are not a substitute; government sample numbers are the only independently verifiable batch-level record. Specify AOCS Ce 1h-05 when commissioning GC fatty acid analysis and reject results derived from Ce 1j-07, which is calibrated for ruminant fats. Verify fatty acid profile against documented Nilotica reference ranges: oleic 57–65%, stearic 30–32% (CBI, 2026). Do not accept cold pressed claims without processing temperature documentation confirming sub-49°C extraction; no current Ugandan expeller method qualifies. Cross-check MSDS unit consistency, saponification value must appear in mgKOH/g, not mg/kg, and melting point must be consistent with Nilotica at 25–30°C. Build ingredient safety files under MoCRA using batch-specific documentation (UNBS report numbers, sample numbers, GC results) filed against each lot received.

For the Society of Cosmetic Chemists and Industry Bodies

Develop technical guidance distinguishing *Vitellaria paradoxa* ssp. *nilotica* from ssp. *paradoxa* for cosmetic formulators, covering the correct analytical method, species-specific reference ranges, and documentation requirements for subspecies verification. Address the absence of shea butter from Codex CXS 210-1999's fatty acid composition table in technical publications. Consider publishing guidance on acceptable labeling terminology for shea butter extraction methods, addressing cold pressed claims and the temperature thresholds that distinguish cold from warm processing.

For U.S. Policy and Research Institutions

USDA Foreign Agricultural Service should commission market intelligence on East and Central African Nilotica shea butter as a distinct commodity from West African *paradoxa*, covering supply chain structure, quality standards, documentation frameworks, and U.S. market opportunity. USDA NIFA and MBDA grant programs should consider applied research funding for practitioner-researcher partnerships that produce market-facing documentation on traceable East African commodity supply chains. Congressional and policy engagement on AGOA reauthorization for Uganda should incorporate supply chain development and documentation standards for Nilotica shea as a high-value, women-producer commodity with demonstrated U.S. market demand.

6.3 THE PATH TO A VERIFIED U.S. MARKET

The Nilotica shea butter market in the United States will not self-correct toward verified sourcing. The documentation gap exists because no actor in the supply chain currently has both the incentive and the capability to close it systematically. Ingredient buyers lack the sourcing infrastructure. Importers without research credibility cannot be published. Researchers without supply chain access cannot produce primary-source documentation.

The convergence required is a practitioner-importer with active primary source access, UNBS government laboratory reports, a live supply chain with documented community sourcing structure, batch-level traceability, who also operates within a research and publication framework that gives the documentation institutional credibility with U.S. buyers,

regulators, and policy actors.

SIGNIFICANCE

That convergence is what this white paper represents. It is the beginning of a U.S. research record on traceable Nilotica shea butter that does not yet exist, and that, once established, becomes the reference document that U.S. formulators, regulators, and policy actors have been working without. The documentation architecture outlined here informs Burgess Origin Co.'s internal approach to verifying Nilotica shea butter. Separate, non-public technical standards and operating procedures translate these concepts into specific implementation details; those internal documents are outside the scope of this white paper.

In practical terms, this white paper is best understood as a knowledge-synthesis document: it maps existing science, standards, and market reports into a coherent set of documentation expectations that a serious Nilotica supply chain would need to meet. Other participants can access the same public sources; what is offered here is a structured way to read them together and to translate them into documentation questions that are intelligible to U.S. laboratories, buyers, and regulators, without specifying any particular commercial configuration.

Scope and Limitations

This white paper is limited to the technical, analytical, and documentation requirements for verified Nilotica shea butter. It does not prescribe commercial relationship structures, licensing models, exclusivity arrangements, or corporate entity design. Those are intentional business strategy questions that sit on top of, but remain distinct from, the documentation considerations discussed here. This document is scoped to U.S. cosmetic ingredient buyers and regulators; European Union-specific regulatory and certification frameworks are outside its scope and would be addressed in a separate annex or publication.

Burgess Origin Co. maintains separate, non-public technical standards, operating procedures, and governance documents that translate the concepts in this white paper into specific implementation details; those internal materials are intentionally outside the scope of this publication.

6.4 ABOUT BURGESS ORIGIN CO

Burgess Origin Co is a U.S.-based supply chain verification and import company headquartered in Northern Virginia, engaged in the development of a verified sourcing framework for Nilotica shea butter for the U.S. cosmetic ingredient market.

The analytical documentation referenced throughout this white paper, including government laboratory chemistry and microbiology reports issued under US EAS 967-1:2022 with independently verifiable sample numbers, reflects primary source material obtained through direct engagement with East and Central African supply chains. Supplier identities and operational details have been intentionally anonymized to protect commercial relationships and to focus the analysis on documentation standards rather than on individual actors. The documentation framework outlined in this paper has been used by Burgess Origin Co. to guide the design of its internal verification processes for Ugandan Nilotica shea butter. Any formal verification programs, marks, or licensing structures that may be developed from this work are governed by separate, internal standards and agreements and are not described in this document.

SCOPE

Originilotica v1.0 applies exclusively to Ugandan Nilotica; additional Nilotica origins require a published update and country-specific annexes before they can be certified under this mark.

This white paper represents, to the author's knowledge, the first commercial documentation standard in the United States anchored in primary-source government laboratory data and subspecies verification for *Vitellaria nilotica* shea butter. It is intended to address a structural absence of U.S. guidance on subspecies verification and to establish a replicable documentation framework for the cosmetic ingredient market.

POSITION

Burgess Origin Co is a Service-Disabled Veteran-Owned Small Business operating in the East African Nilotica shea supply landscape, where the documentation-driven, institutional ingredient-supplier tier remains underserved. This white paper is written from that position: building a Nilotica supply chain to the evidentiary standards of institutional buyers.

U.S. cosmetic formulators and ingredient buyers seeking verified Nilotica shea butter supply may direct sourcing inquiries to Burgess Origin Co at info@burgessorigin.com.

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[1] *CSJ Uganda Shea Market Study (2024), Table 5. Ex-works pricing per kilogram, industrial expeller grade.*

[2] *AOCS Official Method Ce 1h-05: Determination of cis- and trans-Fatty Acids in Vegetable or Non-Ruminant Animal Oils and Fats by Capillary GLC. American Oil Chemists' Society.*

[3] *Codex Alimentarius Commission. CXS 210-1999 (as amended through 2024). Table 1 verified: shea butter (Vitellaria paradoxa or ssp. nilotica) does not appear in the fatty acid composition table of this standard.*

[4] *CSJ Uganda Shea Market Study (2024), Table 6. UNBS EAS 967-1:2022 standard limits versus actual laboratory analyses of Nilotica samples.*

[5] *U.S. Food and Drug Administration (2022). Modernization of Cosmetics Regulation Act of 2022. Public Law 117-328. Implementation guidance issued 2023–2024.*