Cauim

A Fermented Beverage of the Brazilian Interior

From the earthenware vessels of the Tupinambá to the laboratories of Mato Grosso—a tradition of salivary fermentation spanning five centuries.

Researched 24 March 2026

Compiled from sixteenth-century travel narratives, modern microbiology, and contemporary ethnographic studies. Translations from the French are the compiler's own, working from the Gaffarel critical edition (1880) of Léry's text.

Contents

I. Introduction

In the companion document on the peanut, a single sentence noted that tribes in central Brazil ground peanuts with maize to produce a fermented drink used in celebrations. That sentence barely scratches the surface. The drink in question—*cauim*, sometimes transcribed *kawí* in Tupí—turns out to be one of the best-documented indigenous beverages in the Americas, attested by multiple independent European eyewitnesses in the sixteenth century and still produced today by communities in the Brazilian interior. Its story touches fermentation biochemistry, gender and ritual in pre-contact South America, the collision between indigenous foodways and colonial religious authority, and, as of late 2025, Brazilian federal law.

What follows pulls on that thread. ✦

II. The European Witnesses

Two men, neither of whom intended to become ethnographers, left the earliest detailed accounts of cauim. Their testimonies are independent—written in different languages, from different captivities, published within twenty years of each other—and they corroborate one another in ways that lend both accounts considerable credibility.

Hans Staden (1557)

Hans Staden was a Hessian gunner who sailed twice to the New World in the late 1540s and early 1550s. During his second voyage he took a position at a Portuguese fort on the coast near what is now Santos. In late 1553, while hunting outside the fort's perimeter, he was seized by a party of Tupinambá warriors—the dominant indigenous people of coastal Brazil and enemies of the Portuguese and their Tupiniquím allies. Staden spent roughly nine months as a captive, during which the Tupinambá openly discussed their intention to kill and consume him in a ritual feast.[1]

Staden survived, partly through his usefulness as a translator and intermediary, partly through a calculated strategy of religious prophecy that persuaded his captors their misfortunes were linked to threats against his life. He returned to Hesse and published his *Warhaftige Historia* in 1557. The second half of the book is essentially an ethnographic manual, describing Tupinambá customs in systematic detail.

On the matter of cauim, Staden describes the beverage as made from the roots of *abatí*—the Tupí word for maize—and records its central role in the preparations for ritual execution. The Tupinambá, he writes, first drank the cauim, then listened to the speeches of the executioner and the prisoner, before proceeding to the killing.[2] The drink was not incidental to the ceremony; it was part of its architecture.

Jean de Léry (1578)

Jean de Léry was a French Calvinist pastor who spent nearly a year among the Tupinambá in 1557–1558, having arrived in the Bay of Rio de Janeiro as part of a doomed French colonial venture. His *Histoire d'un voyage fait en la terre du Brésil*, published in 1578, is now regarded as one of the earliest works of comparative ethnography produced by a European. Claude Lévi-Strauss would call it his "breviary of the ethnologist" nearly four centuries later.

Léry devotes the whole of Chapter IX to food and drink among the Tupinambá, its full title announcing its subject with sixteenth-century directness:

> *Des grosses racines, et gros mil, dont les sauvages font farine qu'ils mangent au lieu de pain ; et de leur breuvage qu'ils nomment Caou-in.*
>
> *—Of the great roots and coarse grain from which the savages make the flour they eat in place of bread; and of their beverage, which they call Caou-in.*

Léry describes the full production sequence: women gather the raw material—manioc root or maize—and cook it. Then they sit around large pots, chewing mouthfuls of the cooked material and depositing the chewed mass into a second vessel. This chewed paste is cooked again, then transferred to large earthenware containers for fermentation. The finished product, he reports, was opaque and thick, resembling wine dregs, with a flavour he compares to sour milk. Light and dark varieties existed, and fruits could be added for flavour.

Léry is frank about the European reaction to the chewing step. He reports that he and his companions tried to produce a "clean" version of cauim by grinding and cooking the starch without the mastication step. It failed—without the salivary enzymes, no fermentation occurred. Eventually, the Frenchmen adapted. Léry offers a pointed defence of the practice for the benefit of his European readers:

> *Car s'ils considerent seulement cecy : qu'és lieux mesmes où croissent les bons vins, les vignerons, en temps de vendanges, se mettent dans les tinnes et dans les cuves esquelles à beaux pieds, et quelques fois avec leurs soulliers, ils foulent les raisins … Que si on dit là dessus, Voire mais, le vin en cuvant et bouillant jette toute ceste ordure : je respons que nostre Caou-in se purge aussi, et partant, quant à ce poinct, qu'il y a mesme raison de l'un à l'autre.*
>
> *For if they would only consider this: that in the very places where the good wines grow, the vintners, at harvest time, climb into the vats and troughs and trample the grapes with their bare feet—and sometimes with their shoes still on … If one objects, "Yes, but wine, in fermenting and boiling, casts off all that filth," I reply that our Caou-in purges itself likewise, and therefore, on this point, there is the same reason for the one as for the other.*

The argument is characteristic of Léry's method: rather than simply recording the exotic, he turns the lens back on Europe. The squeamishness of his readers, he implies, is a matter of cultural habit, not hygiene. Fermentation purifies both beverages equally.

Other Colonial Voices

Staden and Léry are the most detailed witnesses, but they were not alone. Gabriel Soares de Sousa, a Portuguese planter who spent seventeen years in Brazil, produced his *Tratado Descritivo do Brasil* in 1587, which includes observations on indigenous fermented beverages.[3] The Jesuit fathers who arrived from 1549 onward also documented cauim—though with rather different intentions. Figures like José de Anchieta viewed the drink and its associated ceremonies as obstacles to conversion, and the Jesuits actively worked to suppress cauim production in their mission settlements.[4] ✦

III. The Making of Cauim

The production of cauim follows a sequence that is broadly consistent across the historical and modern accounts, though the choice of substrate varies by community and region. The Tupinambá of the coast, as described by Léry and Staden, favoured manioc (cassava) and maize. The Tapirapé of the Tapi'itãwa community in the interior state of Mato Grosso—the group most thoroughly studied by modern scientists—use cassava as their primary substrate, but also produce cauim from rice, maize, peanuts, pumpkin, cotton seed, and banana.[5][6]

Substrate Preparation

For cassava-based cauim, the roots are first submerged in running water for three to five days. This soaking softens the peel and, critically, begins the degradation of cyanogenic glycosides—toxic compounds present in raw cassava that must be removed before consumption. After soaking, the roots are peeled, cut into small pieces, and sun-dried. The dried pieces are then grated into a flour.[5] For maize-based cauim, dried kernels are simply ground or pounded into meal. For the peanut-and-rice variant, both ingredients are cooked directly.[6]

Cooking

Regardless of substrate, the flour or meal is mixed with water and cooked for approximately two hours to form a thick porridge. This cooking step is essential: it gelatinises the starch granules, breaking their crystalline structure and making the long-chain carbohydrates accessible to enzymatic attack. Ungelatinised starch is largely impervious to amylase—which is why Léry's attempt to skip the chewing step on uncooked material failed on a second, more fundamental level.

The Inoculation

Here is the step that arrested the attention of every European who witnessed it. Among the Tapirapé, the inoculum is prepared not by chewing the cooked substrate itself (as Léry described for the coastal Tupinambá) but by chewing sweet potato. Women of the community take pieces of sweet potato, chew them thoroughly to saturate the material with saliva, and then add this chewed mass to the cooled porridge.[5]

The distinction matters. The Tupinambá method involved chewing the primary substrate directly. The Tapirapé method uses sweet potato as a separate inoculum carrier: the sweet potato provides both salivary amylase and its own sugars, which help jump-start the microbial ecology. Both approaches accomplish the same biochemical goal —introducing alpha-amylase to begin saccharification—but the Tapirapé technique is more efficient, requiring less total mastication for a given batch volume.

In both traditions, the chewing is exclusively women's work. Staden and Léry both noted this gendered division, and the Tapirapé maintain it today. Men in the community firmly believe that if they were to chew the inoculum, the resulting beverage would taste wrong—a conviction that functions as both cultural norm and practical quality control.[7]

Fermentation

The inoculated porridge is left to ferment for twenty-four to forty-eight hours in large earthenware vessels at ambient temperature (approximately 30°C). The microbial ecology is complex, driven by organisms present in the saliva, on the raw materials, and on the surfaces of the fermentation vessels. As fermentation proceeds, the pH

drops progressively—from roughly 5.5 to approximately 3.4—while starch content falls from 14.5% to just 1.2%. Maltose, released by amylase activity, peaks at around 480 µg/ml after 24 hours before being consumed by the microbial population. Lactic acid is the dominant metabolite, reaching 750 µg/ml by the end of fermentation.[5]

The result is a beverage that is simultaneously sour, mildly alcoholic, and dense with suspended solids—consistent with Léry's description of something opaque, thick, and tasting of sour milk. It can be mild enough to serve as a staple food for infants—the Tapirapé feed non-alcoholic versions to children under two as a primary food source—or fermented longer for a stronger product consumed by adults at ceremonies. ✦

IV. The Biochemistry of Spit

The Amylase Problem

Starchy foods—cassava, maize, rice, peanuts—store their energy as long chains of glucose molecules called amylose and amylopectin. Yeast cannot consume these long chains directly. They must first be broken down into simple sugars—primarily maltose and glucose—before fermentation can proceed. This breakdown, called saccharification, requires enzymes called amylases.

Malted barley, the foundation of European beer, solves this problem by germinating the grain: the sprouting process activates the barley's own endogenous amylases. But cassava, maize, and peanuts are not typically malted in South American traditions. The solution across much of the pre-Columbian Americas—and, independently, in pre-modern Japan—was human saliva.

Salivary Alpha-Amylase

Human saliva contains alpha-amylase, historically called ptyalin. This enzyme catalyses the hydrolysis of internal alpha-1,4-glycosidic bonds within starch molecules—in plain terms, it chops the long glucose chains at random internal points, producing shorter chains (dextrins) and simple sugars. The enzyme works optimally around 37°C and a pH near 7, close to the conditions in a freshly inoculated, still-warm batch of cauim porridge.[8]

The Microbial Ecology

Modern analysis reveals a complex, dynamic microbial community in fermenting cauim. In cassava-based batches, *Lactobacillus* species—particularly *L. plantarum* and *L. pentosus*—become dominant as fermentation proceeds and the pH drops.[5] These lactic acid bacteria, the same family responsible for yoghurt, sauerkraut, and sourdough, drive down the pH and create an environment hostile to pathogenic organisms—a natural preservation mechanism.

The yeast population tells a parallel story. In a rice-and-cassava cauim, *Candida tropicalis* was the predominant yeast species, alongside *C. intermedia*, *Pichia guilliermondii*, *Saccharomyces cerevisiae*, and *Trichosporon asahii*.[9] *S. cerevisiae*—common brewer's yeast—is present but not dominant; the alcohol production is a community effort.

Ramos, Almeida, and Schwan extended this work to a peanut-and-rice cauim, tracking the microbial population using both traditional culture methods and DNA-based analysis. *Lactobacillus* again dominated the bacterial ecology, with *L. plantarum*, *L. fermentum*, *L. paracasei*, and *L. brevis* present throughout. The yeast population—including *Kluyveromyces lactis* and *Saccharomyces cerevisiae*—rose from 4.0 to 6.6 log CFU/ml over the

fermentation period.[6] This study confirms that peanut-based cauim is not merely an historical curiosity but a living, scientifically characterised tradition.

The Japanese Parallel

The same biochemical principle was independently employed in pre-modern Japan to produce *kuchikamizake* (口噛み酒, "mouth-chewed sake"). Young women of a Shinto shrine would chew cooked rice and spit the bolus into a vessel, where it fermented into a ritual alcoholic beverage. The practice largely died out by the medieval period, replaced by the more efficient *koji* mould (*Aspergillus oryzae*). But the underlying biochemistry is identical: human saliva provides alpha-amylase to convert starch to sugar, enabling subsequent yeast fermentation.[8]

The convergent evolution of this technique—developed independently in South America and East Asia—is a striking reminder that the fundamental biochemical constraints on fermentation are universal, and that human ingenuity, given the same problem, often arrives at the same solution. ✦

V. Cauinagem: Ritual and Society

Cauim was not merely a foodstuff; it was the medium through which the Tupinambá and related peoples structured their most important social and ceremonial occasions. The drinking ceremony—*cauinagem*—was an event with its own protocols, its own spatial organisation, and its own relationship to warfare, death, and community identity.

The Drinking Party

Léry's account of Tupinambá cauinagem describes gatherings of tens or hundreds of people, often drawn from multiple villages. Thirty or more large pots of cauim might be consumed at a single event. The drinking could continue for two or three days, accompanied by music, dancing, and competitive displays of endurance. Leaving a party before its conclusion was deeply shameful. Men drank from large communal bowls and were expected to consume their portion quickly; women took smaller, more frequent sips.[7]

The Tupinambá's strict separation of eating and drinking particularly puzzled the Europeans. They did not eat during cauinagem, and they did not drink during meals. The European custom of combining the two struck the Tupinambá as exceedingly strange—a neat inversion of the usual dynamic in colonial encounter narratives, where it is typically the European observer who finds indigenous customs baffling.

Women as Producers

Women controlled the entire production chain: they cultivated and harvested the cassava or maize, processed it, performed the chewing that initiated fermentation, monitored the fermentation vessels, and served the finished product at cauinagem. This pattern is not unique to the Tupinambá. Across the broader family of South American fermented beverages—chicha in the Andes, caxiri among the Juruna—women are the brewers. The skill is transmitted from mother to daughter, representing a form of intergenerational technical knowledge that predates any written tradition.

Cauim and Warfare

The most charged context for cauim consumption was the ritual surrounding the execution of a war prisoner. Léry describes the preparations in his chapter on warfare and prisoners:

> *la matinée se passera à danser, boire et caouiner*
>
> *the morning was spent in dancing, drinking, and caouining*

The verb *caouiner*—formed directly from *caou-in*—had entered the French vocabulary of colonial Brazil as a term for this specific form of communal, ritualised drinking. After a captive had been held for weeks or months, a date was set for the ritual killing. On the appointed day, cauim flowed freely. The prisoner was brought to the central plaza, adorned, and given the opportunity to deliver a defiant speech. The executioner responded. Then the killing was performed with a single blow, after which the body was prepared and shared among the community.[27]

Cauim was essential to this process—not as mere lubrication but as a ritual substance. It was the medium in which the community gathered its collective resolve and entered the ceremonial state required for what they understood as an act of spiritual significance: the consumption of an enemy's strength and courage.

Jesuit Opposition

The Portuguese Jesuits who arrived in Brazil from 1549 onward quickly identified cauim and cauinagem as central obstacles to their mission of conversion. José de Anchieta and his fellow Jesuits did not merely disapprove; they actively worked to prohibit cauim production in mission settlements, replacing indigenous fermented beverages with European alternatives and viewing cauim as a conduit for what they called idolatry and moral disorder.[4] This suppression was part of a broader campaign—combined with epidemic disease and the Portuguese slave trade—that devastated the coastal Tupinambá populations within a century of contact. ✦

VI. Cauim's Cousins

Cauim belongs to a vast family of indigenous fermented beverages stretching from Panama to Argentina, all addressing the same fundamental challenge: converting starch into fermentable sugars.

Chicha—a term of likely Kuna (Panamanian) origin that Spanish colonisers applied as a generic label—is the most widely known member. In its most celebrated form, *chicha de jora* from the Andean highlands, it is made from sprouted (malted) maize. But chicha is also made from cassava, quinoa, peanuts, palm fruit, and numerous other substrates, and its preparation methods range from mastication to malting to the use of moulded corn starters. The Bribri of Costa Rica cultivate *Aspergillus* moulds on corn paste wrapped in leaves—a technique strikingly reminiscent of East Asian *koji*.[10][11]

Caxiri, produced exclusively by Yudjá (Juruna) women from cassava, maize, and sweet potatoes, is sometimes called "Amazon beer." **Calugi**, made by the Javaé people of Tocantins state from rice, cassava, and maize using the same sweet-potato mastication inoculum described for Tapirapé cauim, has a similar LAB-dominated fermentation profile.[12]

What unites these beverages is not a single recipe but a shared set of problems and solutions. The peoples of the Americas developed at least three independent methods for saccharification: salivary amylase (chewing), endogenous grain amylase (malting), and fungal amylase (mould cultures). All three remain in use today. The sophistication of these traditions—their empirical understanding of enzymatic conversion, temperature sensitivity, and microbial ecology, achieved without any formal biochemical framework—represents a body of technical knowledge that deserves recognition alongside the more commonly celebrated fermentation traditions of Europe and East Asia. ✦

VII. A Return to the Law

The story of cauim's legal status traces an arc from prohibition to, very recently, formal recognition—a span of nearly five centuries.

As described above, the Portuguese Jesuits actively suppressed cauim production from the mid-sixteenth century onward. This was not a casual discouragement but a deliberate policy, part of the broader Jesuit project of *aldeamento*—the resettlement of indigenous peoples into controlled mission villages where their social and ceremonial practices could be systematically dismantled. Portuguese colonial legislation reinforced this suppression, and for most of Brazilian history indigenous fermented beverages occupied a legal grey zone at best.

On 31 October 2025, the Brazilian federal government published Decreto nº 12.709, a comprehensive regulatory overhaul governing the inspection and classification of plant-based products. Article 41 defines *fermentado de vegetal*—"plant ferment"—as a beverage obtained by fermenting the must of one or more plant species or their juice, concentrate, or pulp.[13] This broad category encompasses traditional indigenous fermented beverages, including cauim, for the first time in Brazilian federal law.

The significance should not be understated. For the first time since Jesuit missionaries began suppressing cauim in the 1550s, Brazilian law explicitly recognises a legal category that includes indigenous plant-based fermented beverages. Whether this legal recognition will translate into meaningful economic opportunity for indigenous communities, or whether it will primarily benefit commercial operations seeking to appropriate indigenous techniques, remains to be seen. But as a legal milestone, the decree closes a circle that opened nearly five centuries ago. ✦

VIII. For the Modern Kitchen

The active agent in saliva—alpha-amylase—is commercially available as a powdered enzyme, widely sold through homebrewing suppliers. The substitution is direct: commercial alpha-amylase performs exactly the same biochemical function as salivary ptyalin, cleaving the same bonds in the same starch molecules to produce the same fermentable sugars.

The following recipes adapt the traditional cauim process for a modern kitchen, replacing the mastication step with commercial amylase. They are starting points for experimentation, not precise reconstructions of any single indigenous tradition.

A note on respect: These recipes are adaptations, not claims to authenticity. Cauim is a living tradition with deep cultural and spiritual significance for the communities that produce it. Making a version at home with powdered enzymes and a glass jar is an act of culinary curiosity, not cultural participation. The distinction matters.

General Principles

Amylase. Use food-grade powdered alpha-amylase, available from homebrew suppliers (typically sold as "amylase enzyme" in 1 oz packets). For the small batches below, ¼ teaspoon is sufficient. The enzyme is most active at 65–68°C (150–155°F) and a pH around 5.3–5.7. Above 75°C it denatures.

Temperature. Cook your substrate thoroughly to gelatinise the starch, then cool to 65–68°C before adding the amylase. Hold at this temperature for 30–60 minutes. You can test for complete conversion with an iodine drop: a sample that no longer turns blue-black has been fully converted.

Fermentation. Traditional cauim relies on wild fermentation. You can attempt this, or inoculate with live-culture plain yoghurt (for LAB) and a pinch of bread yeast (for alcohol production). For a non-alcoholic result, use only the yoghurt and ferment for 24 hours. For a mildly alcoholic version, add yeast and ferment for 48 hours.

Equipment. A large pot, a thermometer, a clean glass or ceramic vessel for fermentation, and a cloth cover to allow gas exchange.

Safety. Use clean equipment, trust your senses, and consume the product fresh within two to three days, refrigerated. These are not shelf-stable products. ✦

Cauim de Mandioca

Cassava — the most traditional substrate

Ingredients: 500g cassava flour (*farinha de mandioca*) or tapioca starch • 2 litres water • ¼ tsp powdered alpha-amylase • 2 tbsp live-culture plain yoghurt (optional) • pinch of bread yeast (optional, for alcoholic version)

Method. Combine the cassava flour and water in a large pot. Bring to a boil, stirring continuously—cassava starch thickens dramatically and will scorch if neglected. Reduce heat and simmer for 15–20 minutes, stirring frequently, until smooth. Remove from heat and cool to 65°C. Stir in the amylase. Hold at temperature for 45 minutes, stirring occasionally; the porridge will thin noticeably as starch converts to sugar. Cool to room temperature (below 35°C). Transfer to a clean fermentation vessel. Stir in yoghurt and/or yeast if using. Cover with a cloth and leave at room temperature for 24–48 hours.

The result should be mildly sour, slightly effervescent, and opaque. Strain through cheesecloth if desired, or consume as-is, including the suspended solids—the traditional way. Cauim is traditionally served warm; gentle reheating is entirely authentic.

Cauim de Milho

Maize — the substrate described by Staden

Ingredients: 400g coarsely ground cornmeal (not fine polenta—look for grits or stone-ground meal) • 2 litres water • ¼ tsp powdered alpha-amylase • 2 tbsp live-culture plain yoghurt (optional) • pinch of yeast (optional)

Method. Bring the water to a boil. Slowly whisk in the cornmeal, stirring constantly to prevent lumps. Reduce heat and cook at a low boil for 30–40 minutes, stirring frequently. Maize requires longer cooking than cassava to fully gelatinise. Cool to 65°C. Add amylase and hold at temperature for 45–60 minutes. Cool to room temperature; transfer, inoculate, and ferment as above.

The finished product will be grainier than the cassava version. Strain or not, according to preference.

Variation: For a closer approximation to Andean chicha de jora, substitute the amylase step with malted corn. Soak dried corn kernels in water for 2 days, drain, and allow to sprout in a warm, dark place for 3–5 days until rootlets appear. Dry the sprouts, grind, and use this malted cornmeal as your base—the germination process generates endogenous amylases, eliminating the need for added enzyme.

Cauim de Amendoim e Arroz

Peanut and Rice — the variant studied by Ramos, Almeida & Schwan (2010)

Ingredients: 200g raw peanuts (unsalted, unroasted, skin-on) • 200g white rice • 2 litres water • ¼ tsp powdered alpha-amylase • 2 tbsp live-culture plain yoghurt • pinch of yeast (optional)

Method. Soak the peanuts in water overnight (8–12 hours). Drain. Combine the soaked peanuts and rice in a large pot with 2 litres of water. Bring to a boil, then reduce heat and simmer for 45–60 minutes, until the rice is completely soft and the peanuts are tender. Using an immersion blender or potato masher, break down the mixture into a rough porridge—some texture is traditional. Cool to 65°C. Add amylase and hold at temperature for 45 minutes. Cool to room temperature. Transfer to fermentation vessel; stir in yoghurt and yeast if using. Ferment 24–48 hours.

The result will be richer and more full-bodied than the cassava or maize versions, with a distinct peanut character. The peanut oil contributes a slight creaminess. The *Lactobacillus* species that dominate this fermentation are the same ones found in cassava-based cauim, suggesting the fermentation ecology is robust across substrates.[6]

IX. Sources & Further Reading

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13 Decreto nº 12.709, de 31 de outubro de 2025. Full text at planalto.gov.br. Article 41 defines *fermentado de vegetal*.

"Je respons que nostre Caou-in se purge aussi."
I reply that our Caou-in purges itself likewise.
— Jean de Léry, 1578