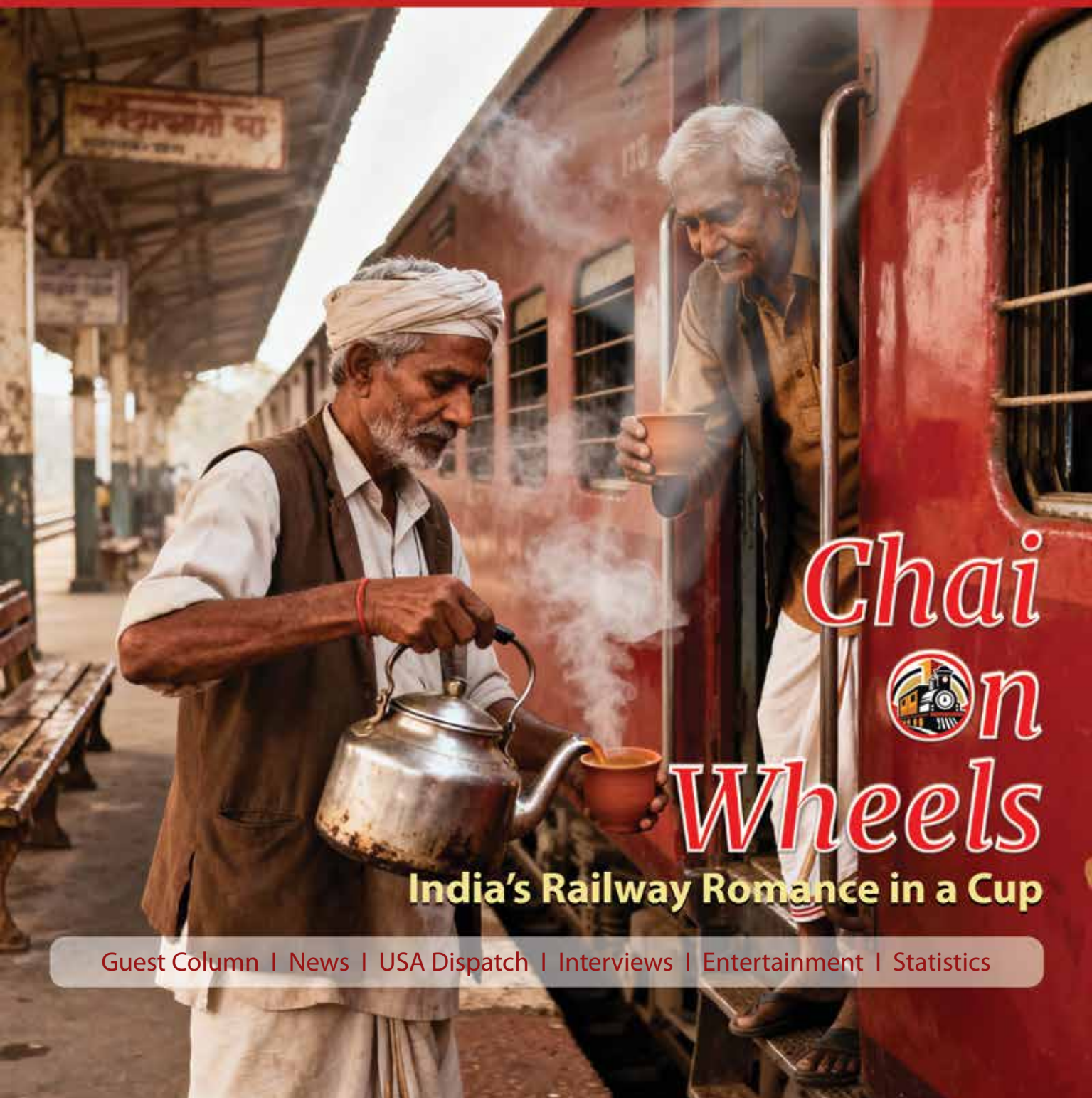


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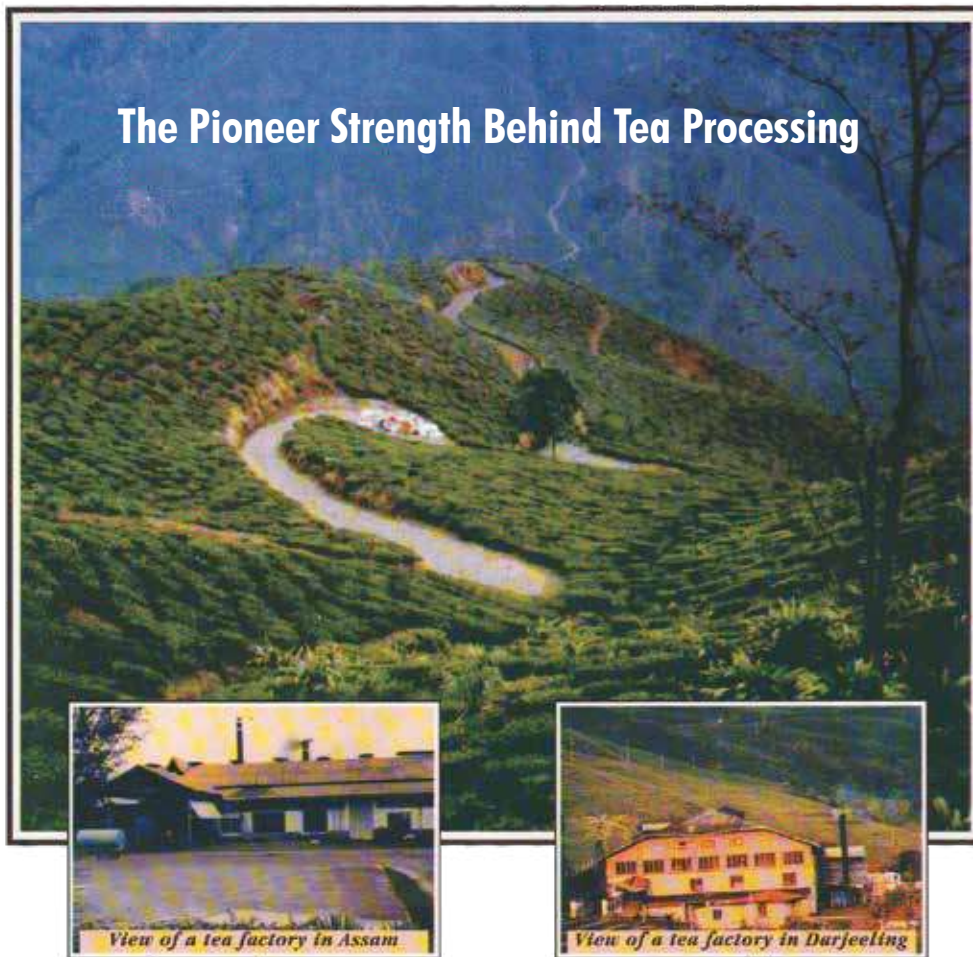
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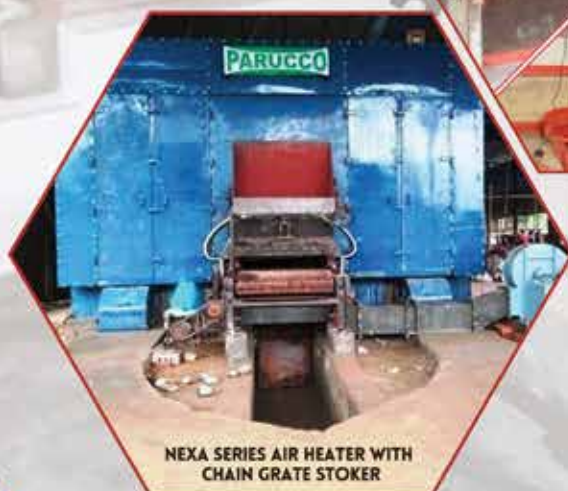
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Soumen Bagchi

Adviser Nayana Goradia

Editor & Creative Director Chitto Ghosh

Assistant Editor Ena Bandyopadhyay

Editorial Co-ordinator Srinjini Swar

Correspondent (Bangladesh) Monjur Hossain

Mailing Address Editorial & Marketing Office, 1 Old Court House Corner, 2nd Floor, Kolkata 700001 T +91 33 2230 7241 / 7242 / 4665

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Branches: **Guwahati** Amarjit Sarmah, 2A Central Point (Opp. Bora Service Station), G S Road, Ulubari, Guwahati 781007 T 0361 252 4253 / 252

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First Flush

RAILS, ROOTS & THE RISE OF RESPONSIBLE TEA

The world's most cherished democratic drink has always been more than a beverage. It is ritual, memory, and comfort poured into a cup. Today, the industry stands at a crossroads - called to honour its heritage while embracing a greener, more responsible future.

Picture gardens where soil breathes again under regenerative care, where balance replaces chemical dependence. Imagine packaging that whispers respect for the planet - foil and paper that preserve flavour yet lighten waste. And then, the railways: for over a century, Indian Railways has been tea's quiet companion, carrying its fragrance across the nation. Modernised tracks and inland waterways now promise journeys as green as the leaves themselves.

Our cover story traces this enduring bond - tea as a fellow traveller, a source of solace and livelihood, woven into the rhythm of trains.

But reflection on sustainability also calls us to pause and honour cultural figures whose legacies echo the warmth of tea itself. Piyush Pandey, the creative ad guru who left us at 70, transformed Indian advertising by rooting it in India's own sensibility, aspirations, and ethos - turning everyday life into timeless national memory. Indian cinema too grieves: Govardhan Asrani, with his wit and humanity; Satish Shah, with his effortless range; Kamini Kaushal, radiant star of Hindi cinema's golden age; and Dharmendra, the titan who never ceased to reign over stardom. Each, in their own way, brewed performances and stories that will continue to steep in our collective imagination.

This editorial is not merely about preserving an industry - it is about safeguarding a way of life. Tradition and innovation need not be adversaries; they can blend, like the perfect infusion, to create a better world, one cup at a time.

And as we close, we celebrate another November Revolution - the triumph of Indian women's cricket under Harmanpreet Kaur. Their victory, like tea itself, is a brew of resilience, patience, and collective spirit - an infusion that warms the nation and inspires the future.

Settle in with this edition, and let its pages steep slowly rich in purpose, resonant in memory, and alive with possibility.



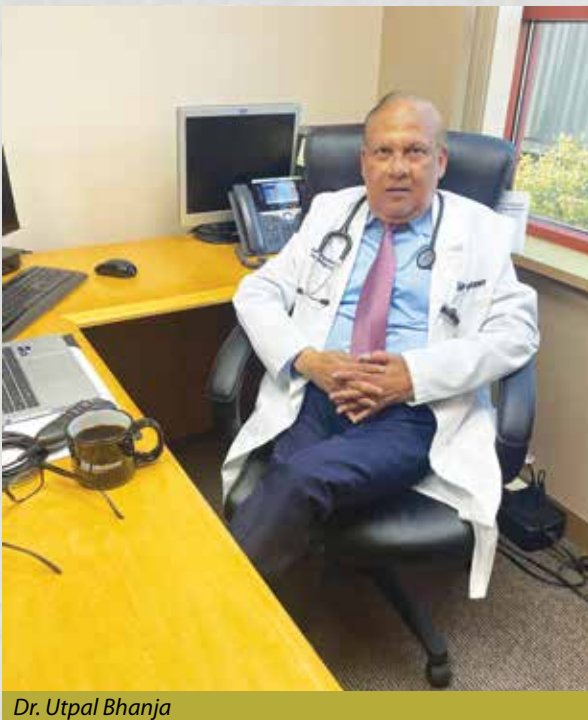
Chitto Ghosh
Editor



Guest Kettle

A CUP OF CLARITY

Oncologist's musings on tea



Dr. Utpal Bhanja

Mornings in Ohio begin differently for everyone. For me, even after more than three decades as an oncologist in Columbus, they begin just as they did in my childhood home in Durgapur, West Bengal - with a steaming cup of tea. The ritual hasn't changed: the first whiff of leaves meeting hot water, the swirl of colour, the promise of a pause before the day's chaos. What has changed is my understanding of tea - not only as a personal source of solace but as a subject of science and history worth reflection.

Tea's story began in ancient China in the third millennium BC, when Emperor Shen Nung, a renowned herbalist, is said to have discovered it by chance. Early Shang dynasty records describe it as a medicinal tonic. By the

Tang dynasty (618 - 907 CE), tea had become China's national drink, celebrated in Ch'a Ching (The Classic of Tea), the first book devoted entirely to the beverage.

Europe first encountered tea through Portuguese traders and missionaries in the 16th century, but it was the Dutch who began importing it commercially in 1610. In England, tea entered through coffeehouses in the 1650s and soon became fashionable after Catherine of Braganza, the Portuguese wife of King Charles II, introduced her tea habit to court. With the British East India Company importing vast quantities from China, tea grew affordable and by the 18th century had become Britain's national drink.

India, however, had its own relationship with tea long before the British arrived. In Assam, wild tea plants grew abundantly, and by the 12th century the Singpho and other indigenous communities consumed it for its medicinal and stimulating properties. But it was colonial enterprise that transformed Assam and Darjeeling into global centres of tea cultivation, breaking China's monopoly and shaping the industry as we know it.

From ancient tonics to colonial trade wars, tea has altered cultures, economies, and even politics. In the American colonies, the Tea Act of 1773 - granting the East India Company a monopoly and imposing taxes - sparked outrage. The Boston Tea Party that followed became a turning point leading to the American Revolution. Today, tea remains the second most consumed beverage in the world, after water.

My own bond with tea was forged early. In Durgapur, evenings often meant neighbours

dropping by, cups clinking over laughter, and my mother insisting no guest should ever leave without “one more cup.” Later, at Nil Ratan Sircar Medical College in Kolkata, tea fuelled grueling study marathons - more lifesaving then, perhaps, than the therapies we were memorising. And when I moved to the US for postgraduate training in Internal Medicine and Oncology, tea became both a tether to home and a quiet anchor through long nights of clinics, research, and hospital duty.

Today, after 35-plus years of practice in Columbus, I see tea through two distinct but overlapping lenses: that of a doctor guided by data, and that of a man who returns to his cup for comfort. My patients often ask me: “Doctor, is it true tea prevents cancer?”

Here’s the nuance: tea is not a miracle potion. Research shows tea contains polyphenols, such as catechins and flavonoids, which act as antioxidants and protect cells from damage caused by free radicals. They may help repair cells, reduce oxidative stress, and lower cancer risk. But these findings are associations, not absolute. Tea should be enjoyed as part of a healthy lifestyle, not as a substitute for it. Tea may improve heart health, reduce risk of type 2 diabetes. Polyphenols in tea have anti-inflammatory properties and may alleviate symptoms of arthritis and gout. Fluoride in tea improves bone/dental health. Chamomile, lavender, and other herbal teas have calming effects that can help reduce stress and improve sleep quality. Tea may also provide improved cognitive function and memory, reduced risk of Parkinson’s disease, lowered risk of stroke, and enhanced metabolism and weight loss.

It’s important to note that the health benefits of tea may vary depending on the type of tea, the amount consumed, and individual health conditions. Moderate tea consumption (2-3 cups per day) is generally considered safe for most people. However, individuals with certain health conditions or those taking medications should consult with a healthcare professional before consuming tea.

There are caveats too, which surprise many. Drinking tea at very high temperatures can irritate the esophagus and cause chronic low grade thermal injury which may cause squamous cell cancer of esophagus. Concentrated tea extracts found in supplements may not carry the same safety profile

as a natural brew. Moderation, as in most aspects of medicine and life, remains the golden rule.

But science tells only half the story. In my years of practice, I have witnessed how tea’s real gift often lies in its intangibles. A tense consultation room softens when a caregiver shares, “Doctor, we both enjoy our evening tea together; it keeps us sane.” A tired nurse on rounds smiles at an offered thermos of chai. Even in oncology wards, tea becomes less about antioxidants, catechins and flavonoids, but more about connection, shared humanity, and endurance.

So, what do I recommend when patients ask me if they should drink tea? Yes - if you love it, drink it. Drink it mindfully, in moderation, as part of your rhythms of rest and resilience. Let it complement your balanced diet and active lifestyle. Let it be your five minutes of stillness in a restless day.

As for me, my days still end the way they began decades ago: with another cup. Even after all these years away from Durgapur, when steam curls up from the surface of my tea, I feel at once the medical halls of Kolkata, the quiet Midwest evenings of Ohio, and the enduring belief that sometimes, health is not measured only in lab reports but in the small rituals that sustain us.



Dr. Utpal Bhanja, MD

*Hematologist-Oncologist and Internist (Internal Medicine)
based in Columbus, Ohio, USA*



Retro-Sip

HARRODS' WAY

*When Contemporary Tea Time first featured "Harrods' Way," London's tea counters were witnessing a quiet revolution. **H. Rahman**, then Senior Buyer at Harrods Food Hall, had captured that moment of change with rare insight - when the world's most storied department store was redefining how modern consumers looked at an ancient leaf.*

Rahman's narrative was both personal and prophetic. He spoke of bringing back the integrity of fine Orthodox teas, of celebrating single-estate origins, and of blending science with sensibility - long before words like "organic," "sustainable," or "designer tea" became the vocabulary of global taste.

A quarter-century later, the Harrods Tea Room still carries forward that spirit with characteristic grace. Today, its curated range - from vintage hand-rolled Assam to seasonally sourced Darjeeling and Ceylon - reflects the same philosophy of provenance, quality, and artistry that Rahman so passionately upheld. Organic teas, once an experiment, have now become an emblem of the brand's conscious refinement.

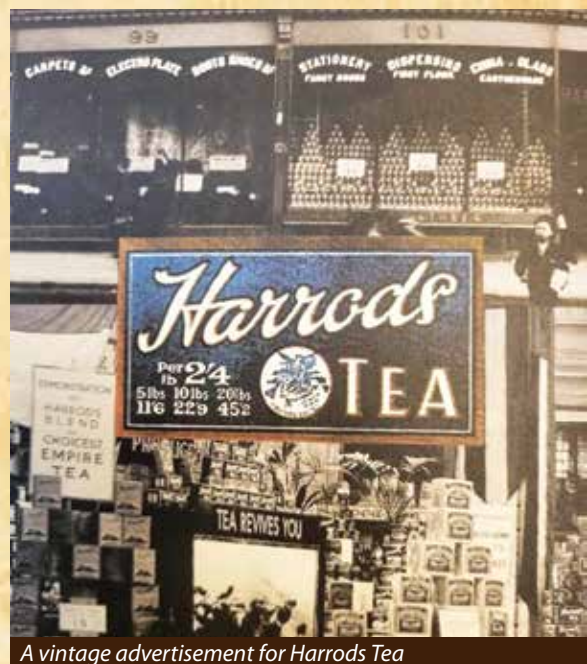
Revisiting this piece is like steeping a fine leaf twice - the essence remains, but time lends it new depth. Harrods' Way is not merely about selling tea; it is about preserving a culture of excellence that continues to define the world's finest brews.

‘**W**hat is speciality tea?’ is something which I am asked daily and which, of course, means many things to many people. For me, it means high quality leaf teas especially those of a FTGFOP or TGFOP variety. These teas from different parts of the world will have something very special and different in common about them. Something even the common and not-so-special teas are perceived as speciality teas, by virtue of the special packaging that may be used. My range of speciality teas are single-estate teas, high quality teas from individual tea-growing regions, blended teas and organic teas.

My central passion is not to reinvent tea itself of course, but to reinvent the concept of tea in the eyes of the public. Not only do we owe this to the founding pioneers of the industry, but we also owe it to ourselves - the future of our great industry depends on it!

Until the late 1970's, most of the British public drank leaf tea. The movement towards teabags and use of CTC's, that had begun in the late 1970's, created such a tidal wave that by the mid 1980's, a large proportion of tea bought was of these types.

Price became ever more important with leading supermarket conglomerates vying for an ever larger share of an increasingly competitive market. This had an extremely negative impact on the trade, as the produce and quality of tea both slumped.



A vintage advertisement for Harrods Tea

So it was against this background that a decade ago, we stopped selling CTC teas and poor quality teabags and switched over instead to Pekoe Fanning for teabags and Orthodox leaf tea for general consumption. One of the first things we perfected was the art of developing blends - those which cater to the tastebuds not only of the expert, but also offer a consistent quality through the whole Harrods range. Indeed, as early as 1930 we were claiming that 'at Harrods the blending of teas is a science.' These scientific methods have enabled us to produce some fine teas. The caddies were also developed and packaged in India.

Just as different vineyards promote their own wine label, so we provide a platform to a number of tea gardens to publicise their own single-estate teas. Names such as Murphulani or Temi, which were not so well known a few years ago, are today seen as the popular choice for connoisseurs. So ensuring consistent high quality is our number one concern. During our most recent India Tea Promotion we had promoted teas from no less than 15 gardens in Darjeeling, 15 in Assam and 3 from Nilgiri. These we believe offer the best single-estate Indian teas.

There has been a public backlash against the indiscriminate use of pesticides, fertilisers and genetically-modified foods. So it is against this background, that we introduced organic teas in Harrods. One rule of retailing that should never be forgotten is, of course, listen to your customers! As a result, we developed a range of packaging that was environmentally-friendly and selected a range of organic teas that was second to none. After analysing a number of Indian tea estates, our buying team finally chose three in Darjeeling and two in Assam. Each garden is absolutely committed to processes that interfere as little as possible with the environment and support the communities that live and work in the gardens. The sale of organic teas is steadily growing year by year. I am confident that this upward trend will continue in the future. One sign that we must be doing something right can be seen through the sudden flux upon the British internal market of organic teas.

Tea is a magical product. Perhaps even the eighth wonder of the world. As a purveyor of speciality tea it is my duty, therefore, to create an image of tea that



Harrods Tea Rooms today

excites and enthuses the British public. I want them to share in the love and fascination we all have for this wondrous product. In this respect, I have worked closely with the leading experts in both India and Sri Lanka to develop a range of designer teas or, as one of my researchers refers to it, our Designer Collection. Harrods Vintage Hand Rolled Tea, for example, is packed in a limited edition handcrafted rosewood chestlet. This was followed by individually hand-carved walnut chestlets made in Kashmir. For the 150-year celebrations, we have selected teas from two 150-year old gardens in Assam and Darjeeling. These teas do create a great amount of excitement and, in consequence, help in the sale of good quality Orthodox tea as well.

Finally, we have the vexed issue of pricing. Prices do give of course, an indication of quality but they can be misleading as well. With experience from listening to the most vital asset - the customer - one will know how to price tea. More important, quality should always be put above the concerns of price. Trustworthy quality allied with expert blending are the keys to success.

Published in the pre-silver issue of Contemporary Tea Time, 2000.



Cover Story

CHAI ON WHEELS

INDIA'S RAILWAY ROMANCE IN A CUP





From the caramel custard of colonial refreshment rooms to the fiery railway mutton curry, Indian Railways has served up many flavours. Yet nothing defines the journey more than the cry of “chai, garam chai!” - a sound as familiar as the whistle of a train.

Written by a professional corporate filmmaker who blends meticulous research with lived journeys across India's railways, this cover story traces how a humble cup of tea became the true heartbeat of travel across the nation's vast rail network.

The whistle the steam & the smell of chai

The year is 1853. A puffing engine, its belly stuffed with coal, huffs into motion from Bombay to Thane. Carriages rattle, whistles screech, and wide-eyed passengers clutch their shawls in disbelief - the subcontinent has just woken up to the age of the railway. But history, as we now know, is never just about wheels and tracks. It is also about smells and tastes. The hiss of steam soon mingled with another hiss, softer yet more persistent: the bubbling of kettles on station platforms, the swirl of tea leaves in boiling water, the sweet sting of sugar, the creamy fold of milk. Somewhere between the clanging metal and the scent of hot iron, India found itself seduced by a beverage that was still, in the mid-nineteenth century, an alien taste.

The Indian railway journey was never just about moving from Point A to Point B. It was also about taste - cutlets crisp enough to scorch your tongue, curries with a surprise kick of spice, puddings aspiring to match English desserts. Yet, through all the culinary experiments

and refined infusion the British had in mind when they brought tea to India; it was a bold, improvised, desi remix that quickly became inseparable from the rhythm of the rails.

In the colonial era, railway catering mirrored social divisions - European, Hindu, Muslim, vegetarian, non-vegetarian. Even water was labelled *Hindu pani* or *Muslim pani*. But tea slowly blurred these lines. Enamel boards at junction stations extolled its virtues, and the daily ritual of sipping from a chipped glass or clay kulhad soon became as essential as the shrill whistle of a departing train. As historian Lizzie Collingham noted, “*the chai-wallah is still the first thing a passenger hears on waking up in a train in northern India ... calling out ‘chai-chai-chai.’*”

Food legends, of course, flavoured the journey too. The caramel custard of G. F. Kellner & Co. refreshment rooms became a byword for indulgence. The Grand Trunk Express and the Frontier Mail won fame for lavish dining cars, where chicken roast and soufflés arrived on bone-china plates. And out of a midnight improvisation emerged perhaps the most iconic of them all: Railway Mutton Curry. A fiery Bengali-style curry, tempered with yogurt for an English palate, it soon found pride of place on the official menu, a dish remembered long after the tracks had cooled.



For most passengers, though, meals were simpler - puri-tarkari bought at a station or luchi and sweets unwrapped from a tin box. Yet, across compartments and classes, there was one unifying moment: the sing-song cry of the vendor pacing the platform. As one railway chronicler observed, "Their strident cries of 'Chai, garam chai!' can penetrate even well-insulated air-conditioned carriages." That call became the anthem of the rails, announcing that no journey in India was complete without tea - the great leveller, the common bond, the flavour that tied the railways to the people.

The first sip: How railways became tea's stage

When the first railway tracks began criss-crossing India, tea was still a British obsession, not an Indian one. The colonial government, busy planting rolling estates in Assam and Darjeeling, faced a stubborn problem: Indians weren't drinking enough tea. Why would they, when buttermilk, lassi, and steaming glasses of doodh already flavoured their days?

In those early decades, trains carried more than passengers - they carried symbols of privilege. British and European travellers in first-class compartments dined with Bordeaux wines, Johnnie Walker whiskies, and pints of Guinness. Menu cards from the period read like inventories of a colonial cellar: Bass Pale Ale poured into tall, frosted tumblers; Teacher's Highland Cream whisky served in cut-glass decanters; and even the occasional bottle of Moët champagne popped open for railway banquets. It was dining by rail as a performance of empire, a ritual restricted to Europeans and Indian elites.

For the millions riding second and third class, another drink took centre stage. Vendors armed with brass kettles and earthen cups turned railway platforms into bustling theatres of sound and smell. Their cries - "Chai garam! Chai-chai!" - echoed across carriages. At first, European overseers expected neat cups of black tea with just a splash of milk. But

India had other plans. Vendors boiled the leaves to a strong brew, added generous ladles of sugar, and poured in enough milk to turn the liquid the colour of monsoon earth. What scandalised British sensibilities became, for Indian palates, perfection.

The transformation wasn't accidental. A stroke of business genius in 1903 - the Tea Cess Bill - channelled export duties into advertising campaigns aimed at building a domestic market. And the railways, with their sprawling reach, became the perfect stage. Every station stall and rattling dining car rehearsed the ritual of chai, turning it from a colonial commodity into a national habit.

By the time alcohol began to vanish from train menus - first nudged by British rules, later erased by post-independence laws - the place of tea was unshakable. Strong, sweet, and shared across carriages, chai had become

the democratic elixir of the rails. Today, liquor is banned aboard Indian Railways, and the elegant dinners of the Raj are only a historical footnote. What remains, enduring and unifying, is the cup of chai passed from vendor to traveller, a drink that turned the railway into a stage where India brewed its own taste of identity.



The restaurant car of the Bombay Mail

The vendors, the voices, and the vagaries of railway chai

The Indian Tea Association, formed in 1881, was among the first to see the railway as the perfect stage for promoting Indian tea. After World War I, contractors at junction stations across Bengal, Punjab, and the North-West Provinces were given kettles and packets to serve fresh tea to passengers. Hoardings in regional languages, extolling tea as both refreshing and modern, decorated railway platforms. Tea was not just a beverage - it was a cultural binding agent, stitching together the country's diverse journeys in a shared ritual of sips between stations. If the train was the stage, the chaiwala was the first true performer. Long before hawkers of chips and bottled water, it was the tea-seller who brought rhythm to India's stations. His cry - "Chai garam, chai garam!" - became a national

soundtrack, carrying over the clatter of luggage, the hiss of steam, and the metallic groan of carriages.

These vendors were not just sellers. They were choreographers of a new ritual. They would squat beside coal-fired stoves on dimly lit platforms, kettles bubbling furiously, and perform a routine as familiar as it was mesmerising: dip the leaves, add water, stir with a battered ladle, fold in milk, heap sugar, stir again, pour high from a dented brass kettle into a tiny clay kulhad or a chipped glass. All this while keeping a sharp eye on the incoming train and the impatient crowd jostling for a hot sip before the whistle blew again.

For passengers, especially in the early decades of the 20th century, this encounter with chai was nothing short of a revelation. It wasn't tea as the British elite had packaged it - delicate, dainty, served in porcelain cups with biscuits on the side. This was a democratic drink, sold for a few paise, accessible to a farmer in a dhoti as much as to a clerk in a starched shirt. The railway station became the great leveller, and chai its social glue.

And food followed suit. Alongside steaming cups of tea, came cutlets fried in pans blackened with age, bread-omelette sandwiches that tasted infinitely better on a moving platform than in any home

kitchen, and the famous "railway mutton curry," a watered-down, anglicised stew that was somehow perfect with rice when eaten at 40 miles per hour. Still, none of these could rival the magnetism of chai.

What sealed the romance was the improvisation. No two vendors brewed it quite the same. One might toss in ginger or cardamom, another might let the leaves boil until bitter, a third might drown it in milk and sugar. Passengers would argue passionately about which station made the best chai - Allahabad's was strong, Howrah's fragrant, Mughal Sarai's a touch smoky. Over time, these little debates turned into part of the railway folklore.

In truth, railway chai was never about uniformity. It was about comfort, familiarity, and above all, presence. At 3 a.m., when the train halted at a nondescript junction, nothing reassured a weary traveller more than the sight of a tea stall's glowing coal fire and the promise of a hot cup.

By the mid-20th century, chai had become not just an accompaniment to train journeys but the very soul of them. What Robert Bruce had planted in Assam nearly a century earlier had finally travelled to every corner of India - not in fine caddies shipped to London, but in boiling kettles and cheap clay cups clutched by millions on the railway.



Dehra Doon railway station - Mussoori in distance

Lipton, branding, and the railway - highway of tea

By the late 19th century, tea in India was still largely a colonial luxury, confined to drawing rooms and planter clubs. The railway changed that forever. Tracks that stitched the subcontinent also became arteries through which tea flowed into everyday life.

No one understood this better than Thomas Lipton. His branded tea was the first to be aggressively promoted in station stalls and pantry cars, making tea affordable and accessible to everyone - from clerks to coolies. The railway, already India's most democratic space, amplified this impact. Advertising played its part too. The colonial government, eager to boost domestic tea consumption, encouraged promotional drives. Posters at stations, pamphlets, and even public demonstrations invited people to "Take Tea - It Cheers But Does Not Intoxicate." The message was deliberate: tea was safe, energising, and modern, unlike alcohol or opium.

Added to it, the cry of the chaiwala soon became more familiar than the station master's bugle. Soon, children began to associate the whistle of a train with the whistle of a kettle. For millions of Indians, their first encounter with branded tea came not in a shop, but at a station stall with a Lipton tin gleaming under a lantern.

By the early 20th century, tea had become inseparable from travel. The movement of goods - coal, jute, cotton - was important for the empire, but the movement of tea was something subtler, almost cultural. Every station cup pushed tea deeper into India's bloodstream, until the country could no longer imagine a train ride without it.

Ritual, nostalgia, and the social life of railway tea

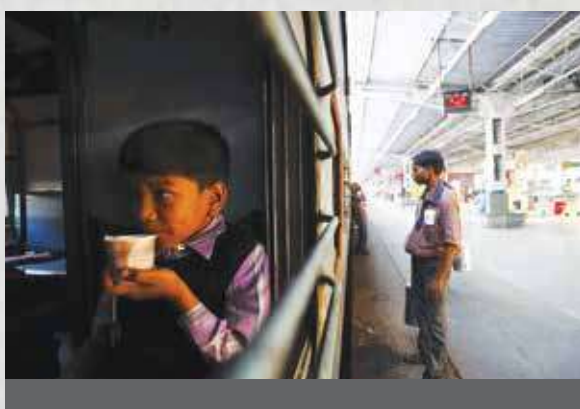
If Lipton and the railway system gave tea its stage, it was the passengers who turned chai into ritual. Over time, that five-rupee kulhad or dented steel cup became far more than a drink - it was a marker

of the railway journey itself. In the democratic space of the railway carriage, tea acted as a social solvent. Strangers became conversational partners over a shared round of steaming cups. Businessmen struck up deals, poets scribbled verses, newlyweds blushed behind their glasses of chai, and solitary travellers found fleeting company in the vendor's banter. Tea softened the loneliness of travel, cut the boredom of long journeys, and infused the carriages with a pulse of familiarity.

For children, tea on the train was often their first sip of the grown-up world. For students heading to universities, clerks travelling for postings, or families visiting relatives, railway chai was not just refreshment; it was a rite of passage, as much a part of the journey as the rush to find your seat or the lull of the engine at night.

Even the vessel told a story. From chipped porcelain cups in first-class compartments to eco-friendly kulhads in dusty stations, each held its own memory of time and

place. In Bengal, railway chai often came with a side of shingara or ledikeni. In Punjab, it was paired with pakoras wrapped in old newspapers. Down south, banana fritters or murukku accompanied the tea. The cup was the constant, the snacks the delightful variables, stitching together a culinary atlas of India on



wheels.

And, then there was the nostalgia. Ask anyone who travelled the railways in the 1950s or '60s, and their memories tumble out: the sing-song chant of the chaiwala cutting through the hum of the platform; the clink of glass tumblers stacked in a wire carrier; the smell of wet coal mingling with the earthy fragrance of fresh-brewed tea. Chai became a sensory bookmark, instantly recalling a particular platform, a childhood trip, or the nervous excitement of leaving home. Even today, despite vending machines and coffee chains, the heartbeat of railway travel remains the cry of "Chaaaai! Garam Chaaaai!" Tea survives not just as refreshment, but as a symbol of continuity in motion.

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Tea, the railways, and India's modern identity

If the British brought tea to India and planted it in Assam, Darjeeling, and the Nilgiris, it was the railways that scattered its seeds into the daily lives of millions. In the steam age, the two industries grew hand in hand: railways ferried tea chests from plantations to ports, and in return, tea warmed the hands of passengers across the subcontinent.

By the early 20th century, this partnership was no longer just about commerce - it was shaping culture. To drink tea on a train was to participate in a modern Indian story: mobility, aspiration, and belonging. Chai on wheels blurred boundaries of class and region. A bureaucrat sipping Darjeeling in a porcelain cup and a farmer cradling strong Assam in a clay kulhad were, for that moment, equals in the democracy of travel.

Independence deepened the romance. The cry of the chaiwala, once a colonial marketing trick, was now part of the soundtrack of a free India on the move. From Nehru's vision of industrial modernity to the everyday hustle of migration and commerce, tea remained the liquid companion of progress. One could argue that if steel was the skeleton of modern India, and the railways its veins, then tea was its bloodstream - carrying warmth, energy, and familiarity wherever the trains went.

Even branding bent to this truth. Lipton may have been the first to ride the rails, but countless Indian tea brands soon followed, realising that the railway carriage was the greatest advertising theatre in the land. A sip taken on a crowded train was worth more than a poster in a city street; it cemented loyalty in taste, memory, and emotion.

Today, as India strides into a new century of high speed trains and digital payments, railway tea still embodies that paradox of continuity and change. You may tap your ticket on an app, but when the chaiwala walks past chanting "Chaaa! Garam Chaaa!" the centuries collapse - you are instantly part of an unbroken tradition.

This is why tea in the railway carriage became more than a beverage; it became a unifier. India, with its multitude of languages, customs, and cuisines, found a rare common denominator in chai. The word "chai" itself transcended scripts and accents, morphing into a national shorthand for comfort. And nowhere was this more visible than on the railways - that colossal web binding India together.

Beyond the cup - snacks, livelihoods, and the social engine of tea

Tea on Indian trains never travelled alone. Almost immediately, it found its perfect sidekick: crispy samosas, piping-hot pakoras, or classic bread-



The dining car of the Maharajas' Express

omelettes. These tea-time companions, served in humble paper cones and wrapped in newsprint, turned the act of sipping chai into a communal ritual. A train compartment became a rolling adda, stitched together by the shared rhythm of sips and bites.

But this story goes beyond indulgence - it's a tale of livelihoods and survival. The Indian Railways and its sprawling network created a vast, informal marketplace - employing small-time vendors, station-side hawkers, and mobile chaiwallahs. Today, the tea industry supports over two million workers, many of whom are women and hail from rural backgrounds.

Even more striking: roughly 70% of India's tea consumption comes from roadside chai stalls, many located at or around railway stations.

In practical terms, that translates to a staggering 80 million people drinking chai every day, with a significant share reliant on vendors whose daily earnings power the local economies.

For millions of rural and underprivileged Indians, selling tea - perhaps tea with snacks - offered more than income: it offered dignity, opportunity, and mobility. Starting a small stall required minimal capital but opened doors to steady earnings. As small entrepreneurs, chaiwalas became independent business owners in India's vast informal sector, which today accounts for over 90% of the country's workforce.

In that light, every steaming cup of railway chai was not only a moment of comfort for a traveller. It was a lifeline - supporting families, empowering women, and anchoring economies in towns and villages far from big cities. Tea became the true social engine of India's tracks, fueling dreams as much as satisfying thirsty journeys.

The eternal romance of steel and steam, leaf and cup

In the annals of global railway history, no other nation has what India does: a railway system whose very

identity is inseparable from a steaming cup of chai. In Britain, trains carried tea to the docks; in Japan, tea stayed in tatami rooms while trains sped into modernity. But in India, two imperial imports - the railway and tea - fused into a bond so intimate that they became indistinguishable in public memory.

Ask any traveller about their railway journeys, and chances are the first image will not be of steel, but of steam rising from a cup - the kulhad warming cold fingers, the quick hand-off through a carriage window, the sing-song cry of "Chai, garam chai!" threading through the rattle of wheels. This is not mere refreshment. It is ritual, theatre, heritage - a performance as enduring as the tracks themselves.

What makes this unique is its scale and constancy. Across more than a century, 7,000 stations, and tens of thousands of kilometres of track, chai has been

the one flavour that kept pace with India's moving millions. Coffee remained southern, milk rural, but tea conquered the railway - and through it, the nation.

So natural is this conjoined identity that we rarely pause to marvel at it. Where else is an entire railway system remembered through a beverage? Not France with its wine, nor America with its coffee. Only in India does

the whistle of a train summon, in equal measure, the fragrance of boiling tea leaves.

As India prepares for bullet trains and gleaming terminals, this cultural symbiosis faces its test. Yet the answer feels inevitable. Even in the sleekest express, travellers will still crave the familiar comfort of a paper cup or clay pot. Because chai on the railway has never been about efficiency - it has always been about belonging.

And so, the story circles back. What began with Robert Bruce's discovery in Assam, what Lipton's marketing carried to the masses, and what countless chaiwalas sustained at every platform, has become larger than commerce. Tea and the Indian Railways are not just partners in history; they are co-authors of a cultural epic.



On these tracks, in every carriage, India carries not only its people and goods, but its very soul - steeped, stirred, and served in a humble cup of chai.



Abhishek Ganguli
*Corporate & Institutional
Filmmaker*

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This article draws upon a range of historical, archival, and cultural materials that document the intertwined story of tea and the Indian Railways.

On the origins of tea in India Historical records of Robert Bruce's introduction of the Assam tea plant in 1823 and subsequent cultivation initiatives by the East India Company.

On tea promotion through the railways Archival material from the Indian Tea Board and early 20th-century marketing efforts, particularly Lipton's campaigns to popularise packaged tea among railway passengers.

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Wikipedia Labour in India (overview of informal workforce)

On cultural representation of railway tea Popular accounts, memoirs, and oral histories capturing the iconic cries of "Chai, garam chai!" and the enduring image of the kulhad.

Comparative insights Studies of railway food cultures worldwide, underscoring the uniqueness of India's tea – railway bond.

Literary and cinematic references Writings and films that have embedded railway tea culture in the Indian imagination, from Satyajit Ray's Bengal to Bollywood's trains.

Special thanks to the many unnamed railway workers, chaiwalas, and passengers, whose lived experiences passed down in stories, songs, and memories - remain the truest source of this narrative.





The Postscript

THE IRON ROADS OF TEA

How rail forged India's chai empire

The very existence of India's multi-billion-dollar tea industry is inextricably tied to the history and logistics of the railway network. Where our cover story finds the heart of the timeless continuing connection, our postscript journeys through its historical roots.

"The Iron Roads of Tea: How Rail Forged India's Chai Empire," is an edited and abridged excerpt that dives into the pivotal role of the railways - from transporting indentured labour to marketing the first domestic cups - in shaping tea from a colonial commodity into a national obsession.

Whenever one travels by train across India, the pervasive scent and warmth of tea - chai - is an inevitable companion. This ubiquitous presence, witnessed in photographs taken nearly a century apart, demonstrates tea's enduring centrality to Indian social, cultural, and economic life.

This profound relationship between tea and travel is not coincidental; it is a meticulously engineered historical link. As a 19th-century poem from north India observed about the new rail network:

*Off goes the train, with fierceness and rush,
Mighty it looks, creates thunderous sound on its way,
Reached all corners (subahs), where it is marvelled as a wonder,
The piece of work is admired by all.*

(Translated from Hindi by Nitin Sinha, Berlin)

The expansion of this "marvelled" railway network was the engine that powered the rise of the Indian tea industry, transforming a colonial export commodity into the nation's favourite daily brew.

The network effect: Infrastructure and industry

The first rail passenger line opened in 1853 in India, covering 34 kilometres between Bori Bunder (Mumbai) and Thane. The primary goal, led by the British East India Company, was to link inland resource-rich areas directly to the three major coastal Presidency Ports (Bombay, Calcutta, and Madras), ensuring the rapid and cheap funneling of raw materials to Britain, and enabling swift military deployment.

By 1913, the railway infrastructure had soared to 54,000 km, comprehensively connecting major port cities like Bombay, Calcutta, Madras, and Karachi to the inland areas. This dense interior network, especially the Delhi-Calcutta line along the Ganges, became the arteries of urbanisation and economic development. The fate of the fledgling tea industry, established in the mid-19th century, was intrinsically linked to this expansion. Early tea estates in Assam



relied on slow, cumbersome transportation via bullock carts, elephants, or waterways. While connectivity to London's tea markets via Calcutta and Kochi was vital, the internal logistics were crippling. Only after the railway network penetrated the tea-growing regions did the area under cultivation grow exponentially, reaching 284,922 hectares by 1920. Even today, the railways remain the most cost-efficient mode for bulk transportation of goods like coal and fertilisers to the remote railheads nearest the estates (Rs 1.96 per tonne-km, compared to Rs 3.78 for road transport).

The migration machine

Perhaps the most crucial role the railways played was in solving a logistical and humanitarian crisis: the transportation of labour. In the mid-19th century, planters struggled to secure permanent local wage workers, forcing them to tap into vast migrant sources - tribal populations from central India were brought to Assam and Bengal, and Tamils from the Madras Presidency hinterland were moved to the Nilgiris, Munnar, and Wayanad.

Initial transportation via steamers resulted in significantly high mortality rates, making the process inefficient and risky. The expansion of the railways provided the only efficient, reliable, and safer solution to this logistical nightmare. By linking labour sources directly to plantations, the railways enabled tea to steadily grow into India's largest net foreign exchange earner until the 1980s. This industry still provides secure direct employment to over a million people. The industry's workforce is second in size perhaps only to the Indian Railways itself, which employs over 1.2 million, many of whom are similarly migrant workers.

The hill stations and narrow gauges

The development of specific regional railway lines was critical to the growth of major tea-producing hubs:

Assam-Bengal Railway (ABR) Established in 1865, the ABR connected the port of Chittagong to Tinsukia in Upper Assam. Its primary goal was to ensure access to the Makum Coal Reserves, but it proved indispensable for the growing tea industry. Without the ABR, Assam would not contribute 55% of India's total tea production. Similar metre gauge routes, like the NFR from Katihar to Alipurduar, spurred the development of the Terai-Dooars region, the second-largest tea producer.

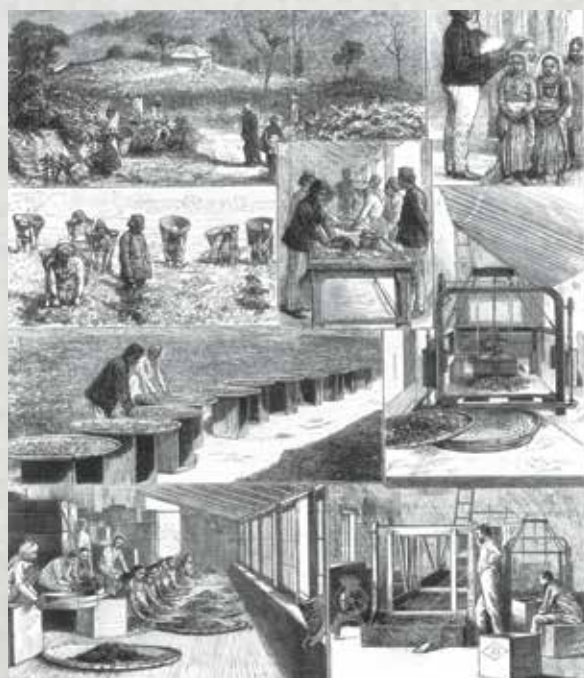
The Darjeeling Himalayan Railway (DHR) Described by Mark Twain in 1923, the 'toy-train' (DHR) is more than a marvel of engineering. Its development, completed in 1881, cut travel time from Calcutta to Darjeeling from a fortnight to mere hours. The area under tea in the Darjeeling Hills exploded from 18,888 acres in 1874 (pre-DHR) to 59,356 acres in 1920, establishing "Darjeeling Tea" as India's only world-famous generic brand. UNESCO recognised its cultural significance as a "unique testimony to the cultural tradition of tea-plantation."

Other Mountain Railways The Nilgiri Mountain Railway (1885–1908) and the short-lived, privately-owned Kundala Valley Railway (1902–1924, India's first monorail later converted to narrow gauge) in Munnar also played vital roles in linking remote hill plantations to commercial centres, though many of these small local lines were eventually phased out or destroyed, such as the Kundala Valley Railway by the 'Great Flood of 99' (Malayalam calendar).

From export to everyday: The domestic chai market

For most of the nineteenth century, tea was produced almost exclusively for export. In 1853, 183.4 tonnes were exported; this soared to 98,325 tonnes by 1905, driven by rail-integrated connectivity.

The shift to a domestic market began in 1903 when Viceroy Lord Curzon introduced the Tea Cess Bill to



tax the trade and fund the development of Indian consumerism. The Tea Cess Committee recognised the Indian Railways as the ultimate platform for this purpose.

Measures included distributing free cups of prepared tea at Howrah Station, selling tea packets for one pice, and demonstrating brewing techniques at public stalls. After World War I, contractors with kettles served major railway junctions.

By the 1930s, the Tea Association displayed hoardings and recipes in Indian languages across platforms, declaring their campaign a success.

This success is measured in consumption figures: by 1940, 49.7 million kgs of tea were consumed internally. Today, that number stands at 1,100 million kgs. It is not an exaggeration to argue that the railways and the chai stall were the primary shapers of India's mass tea consumption, pushing per capita intake from one cup per week in 1940 to one cup per day in the 21st century.

So, the next time you savour a cup of tea on a train journey, you are not simply enjoying a beverage; you are participating in a long and complex history - a history forged by iron tracks and steam power.



Rahul Ganguly

*Sociologist and Research
Associate at the Gulma Junction
Project in Mohurgong & Gulma
Tea Estates.*





Kulhad Kahani

CUPS THAT KEEP RAILGADI GOING



It is the sound that travels first - before the whistle, before the wheels - the crisp, earthy clink of a kulhad finding its place on a railway platform. For more than a century, this humble clay cup has been the unofficial punctuation mark of India's train journeys. Long before sustainability debates or heritage nostalgia became fashionable, the kulhad had already secured its citizenship in the nation's collective memory. From the crowded tea-stalls of Mughal Sarai to the mist-soaked mornings of Siliguri Junction, its aroma-soaked presence has shaped the very grammar of travel. What makes the kulhad more than a cup is its unique capacity to carry culture. It has leapt from the platform to the pages of literature, appearing in short stories as a metaphor for rootedness and impermanence; it has flashed across cinema screens as shorthand for authenticity - an iconography of Indianness no prop-designer dares overlook. Scriptwriters have used it to signal romance, rebellion, or simple human warmth; novelists, to evoke village earth meeting urban aspiration. In an era saturated with steel vending machines and paper cups, the kulhad remains the one object capable of summoning both memory and meaning in a single, fragrant exhale of steam.

Today, as the Indian Railways revisits the idea of reviving kulhad service across stations and trains, its comeback is not merely about replacing plastic. It is about reinstating a sensory heritage - an experience that travellers recognise instantly, that storytellers celebrate instinctively, and that generations have accepted not as a novelty but as a birthright. The kulhad, once again, stands poised to reclaim its place on the nation's moving stage.

The Kulhad Kahani briefly traces this timeless journey of Indian Railways alongside its very special, deeply indigenous tea cup.

The Editor

India's rich heritage of pottery dates back to the pre-Vedic era, with the making of clay vessels an ancient craft deeply interwoven into the fabric of daily life. Over millennia, this tradition evolved through various historical periods, adapting in form and function while retaining its essential utility. These earthenware vessels became indispensable across regions and cultures, serving as humble yet enduring companions to India's most cherished beverage - chai. The ubiquitous clay cup, or kulhad, transcended mere utility to become a symbol of warmth and community, especially as the "Janta's cuppa" on bustling railway platforms and neighbourhood tea stalls. From the first whistle of the train to its final stop, cups of steaming chai in kulhads keep the spirit of the railgadi alive - fuelling camaraderie, comfort, and countless stories across the tracks. Despite the arrival of modern materials like paper and plastic cups, the kulhad has maintained its sway, revered for the sensory and cultural experience it offers.

Chai itself is more than just tea; it is an alchemical brew that infuses energy and harmony into daily life. For devotees of this quintessential Indian drink, clay pots offer a renewed way to savour their cups in peaceful communion. The magic of chai poured into a kulhad lies not only in the blend of spices - ginger, cardamom, and tea leaves - but also in the earthy aroma and tactile warmth imparted by the porous clay. Each sip is a journey into nostalgia, evoking memories of shared moments steeped in tradition.

The kulhad represents a sustainable, soulful alternative to disposable cups. Crafted by hand from raw clay and fired in village kilns, these vessels are unglazed and fully biodegradable, returning to the earth from which they were born after a single use. This ancient practice thrived anew in the early 20th century, as roadside tea stalls proliferated across India - from rural highways to urban railway platforms. The "kulhad wali chai" ritual became a national emblem of simplicity and environmental harmony, breathing life into the tea-drinking experience in ways no plastic or glass can match.

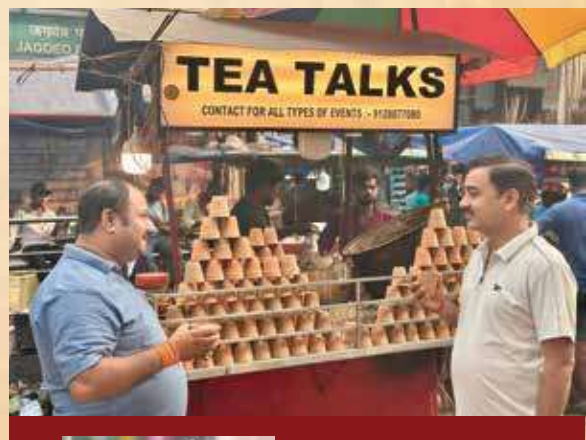
Efforts to revive the kulhad have surfaced periodically, most notably under the stewardship of former Railway Minister Lalu Prasad Yadav in the early 2000s, who championed replacing disposable cups on trains with earthen ones. While logistical challenges limited

widespread adoption, the idea resonated as a call to reconnect with tradition and sustainability. Indian Railways has since re-emphasised kulhad use under initiatives like "Swachh Bharat" and the plastic ban, encouraging vendors to embrace this heritage vessel. IRCTC now promotes kulhad serving of chai, coffee, and lassi at railway stations, blending convenience with cultural preservation.

Contemporary cafés from Delhi to Bengaluru pay homage to this legacy by serving "kulhad chai" and innovating with flavours such as saffron milk, chocolate chai, and even espresso in clay cups. Yet, nothing quite matches the straightforward pleasure of a steaming cup of chai from a roadside vendor, poured in a humble kulhad - the drink and vessel together embodying India's enduring tea culture.

Ultimately, tea remains a timeless friend to millions - its cups a testament to shared memories, connection to the earth, and simple joys. In the end, how one prefers their tea is a personal story woven into this tapestry of tradition and taste.

India's age-old pot-making tradition and the kulhad's sustainable revival highlight how this simple clay cup continues to shape the Indian tea experience, from the heart of rural villages to the bustling platforms of Indian Railways.



Swarupa Das
Contemporary Brokers,
Kolkata



Brew Point

THE TEA TURNAROUND

A dialogue with the President of TAI



As the Managing Director of Diana Tea Co. Ltd., Mr. Sandeep Singhania oversees three distinguished gardens in the Dooars region of North Bengal - estates long recognised for their consistent quality and strong auction performances. Since assuming charge as President of the Tea Association of India (TAI) on January 10, 2024, Mr. Singhania has brought a results-driven focus to the Association's engagement with key regulatory and policy bodies including the Tea Board of India, FSSAI, CIB&RC, and both Central and State Governments.

Under his leadership, TAI has deepened its advocacy on pest management, export competitiveness, and sustainability, key concerns shaping the future of Indian tea. In this exclusive Contemporary Tea Time interview, Mr. Singhania speaks about the Association's current priorities, the evolving challenges of climate and markets, and his vision for rebranding Indian tea as a global premium origin.

As one of the oldest and most influential trade bodies in Indian agriculture, how does the Tea Association envision its evolving role in the next decade - especially in the face of climate change, global competition, and shifting consumer preferences?

You know, the Tea Association of India (TAI), as one of the oldest and most influential trade bodies in Indian agriculture, sees itself evolving rapidly in the face of climate change, intensifying global competition, and shifting consumer tastes. It is actively redefining its role to build a more resilient and forward-looking ecosystem for Indian tea. A key focus is on promoting sustainable, climate-smart practises, including advanced pest control solutions developed in collaboration with the Tea Research Association (TRA). At the same time, TAI is working to boost India's global edge through higher quality standards, stronger branding and traceability, and wider market reach via digital platforms and export promotion. It is also responding to changing consumer preferences by driving product diversification into specialty, organic, and wellness



Mr. Sandeep Singhania

teas that appeal to health-conscious and lifestyle-driven segments worldwide. Alongside these efforts, the Association continues to lobby for supportive government policies on production incentives, exports, and infrastructure development. Taken together, these initiatives are shifting TAI from a traditional advocacy body into a strategic powerhouse for sustainable growth, innovation, and global brand strength for Indian tea.

What distinguishes North Indian tea - both in terms of terroir and trade - from other regions? How is the Association working to preserve and promote this identity in domestic and international markets?

North Indian teas - from Assam, Darjeeling, and Dooars - stand apart for their distinctive terroir and heritage. Assam's lush plains yield strong, malty CTC teas; Darjeeling's Himalayan slopes produce the delicate, aromatic Orthodox teas known as the "Champagne of teas"; while the Dooars region contributes bright, brisk teas ideal for blending. Together, they represent nearly three-quarters of India's tea output and remain central to our export

strength.

TAI works closely with the Tea Board of India to uphold this legacy through quality assurance, GI protection, and global promotion under schemes like the Tea Development & Promotion Scheme. The Association also facilitates participation in trade fairs and buyer-seller meets to enhance market access, while encouraging innovation, sustainable practices, and value addition to reinforce India's image as a source of premium, authentic teas.

What are the Association's current priorities in terms of policy advocacy with the central and state governments? Are there specific reforms or incentives you believe are critical for the sector's sustainability?

Our current priorities centre on ensuring long-term sustainability and fair returns for producers. We are advocating for a Minimum Sustainable Price (MSP) to stabilise auction prices and calling for reforms to make the auction system more transparent and cost-efficient. To protect domestic growers, we've urged the government to disallow duty-free tea imports under Advance Authorisation and SEZ provisions, and instead allow imports only against full duty payment with post-export refunds.

We're also pressing for a minimum import price on foreign teas, higher export incentives under RoDTEP, and greater support for technological modernisation, renewable energy adoption, and welfare cost-sharing. Our objective is to ensure that India's tea industry remains both economically competitive and socially responsible in the years ahead.

With global tea markets becoming increasingly competitive, what strategic steps is the Association taking to boost exports and enhance India's brand equity as a premium tea producer?

TAI is actively pursuing measures to strengthen India's export competitiveness and reinforce its image as a global source of quality tea. We've urged the government to revise the RoDTEP (Remission of Duties and Taxes on Exported Products) rates to around 5–6% to make Indian teas more price-competitive abroad. The Association also seeks enhanced policy support for premium and Orthodox teas to help them gain better recognition and fair pricing in international markets.

To address non-tariff barriers, we've made representations for harmonising Maximum

Residue Limits (MRLs) with importing nations and for resolving payment-related challenges through official engagement. TAI continues to co-ordinate closely with the Tea Board and other associations in organising inbound buyer delegations and outbound trade missions - initiatives that promote India's diverse tea origins, distinctive flavour profiles, and commitment to sustainability.

At the same time, we encourage the adoption of modern processing technologies, sustainable cultivation practices, and value-added product development to meet the expectations of high-end markets. In all these efforts, our focus remains on building India's brand equity as a producer of authentic, responsibly crafted, and premium-quality teas.



Tea packing plant

Labour welfare remains a cornerstone of the tea industry. How is the Association addressing challenges around wages, housing, healthcare, and education for plantation workers - especially in the post-pandemic context?

Labour welfare and plantation sustainability are inseparable pillars of the tea industry, both anchored in the Plantation Labour Act of 1951, which mandates employer responsibility for key welfare provisions - from housing, sanitation, and drinking water to medical care and education.

In the post-pandemic period, this framework gained renewed focus. Many estates, with support from the government and specialised agencies, have strengthened on-site healthcare and medical infrastructure to ensure the well-being of workers and their families. TAI continues to engage with policymakers to explore collaborative welfare models where social costs are equitably shared between the industry and the government. The goal is to maintain the delicate balance between economic viability and the social commitments that define the ethos of India's tea plantations.

Are North Indian producers embracing innovation in packaging, branding, or product diversification - particularly with specialty and wellness teas? How is the Association facilitating this shift?

Yes, North Indian producers are increasingly innovating to meet changing global preferences. Estates across Assam and North Bengal are introducing specialty and wellness-oriented teas - including Green, White, herbal, and handcrafted blends - targeting premium and health-conscious consumers. Many are investing in modern, eco-friendly packaging and using digital storytelling to highlight authenticity, sustainability, and origin.

TAI supports this shift by working closely with the Tea Board of India under the Tea Development & Promotion Scheme, helping producers access schemes for branding, packaging, and participation in global trade fairs. The Association also promotes training and knowledge-sharing on product innovation, sustainable cultivation, and export readiness.



Mr. Singhania addressing the Association's AGM

By advocating for policy incentives, simplified export procedures, and modernisation support, TAI is guiding the transition from bulk exports to value-added, branded teas - strengthening India's position as a source of high-quality, distinctive, and innovative tea products.

What initiatives are underway to help tea growers adapt to erratic weather patterns, soil degradation, and pest management? Is there collaboration with research institutions or agri-tech startups?

Several initiatives are in motion to help growers adapt to climate variability and ecological stress. Planters are being encouraged to adopt sustainable practices such as soil testing, balanced fertilisation, mulching, and rainwater harvesting to improve soil health and conserve moisture. Research institutions are developing climate-resilient and pest-tolerant tea clones, while Integrated Pest Management (IPM) techniques - like biological controls and threshold-based spraying - are promoted to minimise chemical use.

The Tea Research Association (TRA) plays a central role in this effort, developing microbial pesticides recognised under India's Plant Protection Code and training garden workers to rear beneficial insects locally. This eco-friendly approach helps reduce pesticide residues and ensures compliance with international standards. Growers are further supported through training programmes, weather advisories, and schemes such as crop insurance and subsidies for micro-irrigation.

TAI remains in constant collaboration with TRA and other research bodies to advance pest and disease management, conduct field trials, and drive innovations aimed at improving both productivity and sustainability in Indian tea cultivation.

How does the Association support its members with market data, price trends, and buyer insights? Is there a move toward more digitised and transparent trade practices?

TAI provides its members with a steady flow of market intelligence, policy updates, and trade insights to support informed decision-making.

Through close co-ordination with the Tea Board of India, the Association disseminates up-to-date statistics on production, exports, and consumption patterns, along with regular circulars on legal, financial, and policy matters.

It also keeps members informed on evolving pesticide regulations - approved and banned chemicals, MRL standards, and residue compliance norms - to ensure global market readiness. Going forward, the Association supports greater digitisation of trade, improved auction transparency, and data-driven systems that strengthen accountability and competitiveness across the value chain.

What is being done to attract younger generations - both as consumers and professionals - to the tea industry? Are there mentorship, entrepreneurship, or educational programmes in place?

The tea industry recognises that its future depends on the engagement of younger generations - both as consumers and as professionals. To appeal to youth audiences, producers are innovating with green, specialty, organic, wellness, and ready-to-drink teas that align with health-conscious, eco-aware lifestyles. Through digital storytelling, ethical branding, and social-media engagement, tea is being repositioned as both a sustainable and aspirational beverage. Tea cafés, tasting events, and workshops are further making tea culture accessible and experiential for millennials and Gen Z.

On the professional front, institutions like the Tea Research Association (TRA) and the Indian Institute of Plantation Management (IIPM) are drawing young talent into the sector through internships, research collaborations, and specialised academic programmes. These initiatives offer hands-on exposure to modern cultivation, technology, and sustainability practices - helping shape a new generation equipped to lead India's tea industry into the future.

How does the Association support storytelling, heritage preservation, and public engagement around tea - especially in North India's rich tea-producing districts?

Tea is not just a beverage - it is a living heritage. Its charm lies as much in the leaf as in the journey it takes - from the soil and the hands that nurture it to the craftsmanship that defines its aroma and taste.

Every stage of plantation and manufacture carries a story, making tea more than a drink; it is a chronicle of communities, landscapes, and human endeavour.

Over the past two centuries, the tea-growing districts of North India have become living laboratories of human evolution - nurturing unique traditions, work cultures, and social practices. Within these regions, tea is woven into daily life, shaping identities and local economies alike.

By preserving and celebrating these narratives, the Association views the Tea Industry not merely as an economic enterprise, but as a repository of culture - one that embodies the shared heritage, resilience, and creative spirit of generations connected through tea.

Looking back over the past decade, how would you assess the Tea Association's success in fulfilling its core mandate - promoting and protecting the trade, commerce, manufacture, agriculture, and industry of tea? Could you share specific milestones or initiatives that best reflect this achievement?

Over the past decade, the Tea Associations have continued to uphold their foundational mandate - to promote and protect every aspect of the tea industry, from cultivation and manufacture to trade and export. These bodies, some with a legacy of more than 140 years and most with over seven decades of service, have remained integral to the evolution of Indian tea.

They have played a vital role in helping the industry adapt to structural changes such as the rise of small tea growers, bought-leaf factories, and stand-alone manufacturing units, while nurturing a more diversified and value-added supply chain. At the same time, they have encouraged the adoption of modern technologies - from AI-enabled field management to advanced agricultural and manufacturing practices - ensuring that India's tea sector remains competitive, sustainable, and future-ready.



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Contemporary Tea Time

Editorial & Marketing Office

Contemporary Brokers Pvt. Ltd.

1, Old Court House Corner, 2nd Floor
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THE NEW DIPLOMACY OF TEA

The global tea trade, once a quiet choreography of chests, ships, and distant ports, now unfolds at the intersection of climate responsibility, geopolitical unrest, and technological reinvention. What was once a silent passage of cargo has become a mirror of global ethics, tracing how economies negotiate the balance between commerce and conscience. Tea freight today is not merely a logistical concern - it is a moral map, a vessel of values, and a statement of intent.

Tea's journey from garden to cup is now charted not only in miles but also in emissions. Transportation accounts for nearly a third of tea's carbon footprint, making the choice of freight a decisive act of climate arithmetic. Ocean shipping, emitting 10–40 grams of CO₂ per tonne-kilometre, remains the most efficient. Yet air freight - exceeding 600 grams - is nearly sixty times more polluting. Still, high-value teas such as Darjeeling's first flush and Japanese Matcha depend on air routes to preserve their volatile freshness and fleeting market windows. This paradox - between quality and climate poses a deeper question: can freshness be redefined in ethical terms? Might the industry educate consumers to value slower, more sustainable teas, even if they arrive less pristine?

The rise of "farm-to-cup carbon audits" aims to trace emissions across the entire chain - from plucking to packaging - though fragmented data and uneven

standards still obscure their accuracy. Industry pioneers like Unilever and Tata Consumer Products are experimenting with Scope 3 emission disclosures, offering early blueprints for transparency. Even packaging reflects this evolution: the colonial-era plywood chest has yielded to recyclable paper and fibreboard, reducing waste but introducing new challenges of moisture control during sea transit. The tea chest, once a symbol of imperial reach, now becomes a microcosm of sustainability.

But if climate defines the moral cost of movement, geopolitics dictates its volatility. Freight prices have soared in recent years amid Red Sea tensions, Panama Canal droughts, and global port disruptions. Kenya's dependence on the Suez route, India's congested eastern ports, and Sri Lanka's economic

turbulence underscore the spatial fragility of tea logistics - where freight economics now shape not just profitability but the survival of entire export systems. A delay in the Suez can mean missed auctions in Mombasa, spoiled cargo in Colombo, or price volatility in London. Tea, unlike bulk commodities, is time-sensitive. Its biochemical integrity

- volatile oils, moisture content, aroma profiles - can degrade with every hour lost. In this context, freight becomes diplomacy. A container rerouted is not just a logistical decision; it is a geopolitical negotiation.

Trade corridors are increasingly weaponised. Auctions, tariffs, and maritime blockades can disrupt



tea flows, turning a cup of Assam into a casualty of global politics. The tea industry must now think like diplomats: mapping risk, diversifying routes, and building resilience into every shipment. The choreography of freight is no longer about efficiency alone - it is about foresight, flexibility, and ethical navigation.

Technology, in this shifting landscape, becomes the new compass. IoT-enabled containers now monitor humidity and temperature in real time, safeguarding tea's biochemical integrity while minimising spoilage. These smart containers are not just tools - they are sentinels, ensuring that the leaf arrives as intended, whether in Tokyo's tea salons or Berlin's organic cafés. Blockchain-based traceability platforms, led by initiatives like the Ethical Tea Partnership, translate ethics into evidence. Every node in the supply chain - from garden to warehouse to retailer - is logged, timestamped, and verified. This turns moral intent into measurable trust.

Artificial intelligence is also entering the fray. Predictive analytics now help optimise routes, forecast delays, and even suggest alternative ports based on real-time data. Machine learning models can simulate the impact of weather patterns on shipping schedules, helping exporters plan with greater precision. In this sense, technology is not just a tool - it is a philosophy of movement. It invites the industry to ask: can freight be poetic? Can the journey of tea be reimagined not just as a logistical arc but as a narrative of care?

As the tea industry embraces this new diplomacy, deeper questions emerge - questions that challenge the very grammar of trade. Is speed always virtuous? If air freight preserves freshness but pollutes more, should we redefine freshness itself? Can terroir include transit? Just as soil and climate shape flavour, can the ethics of movement become part of a tea's identity? Imagine labels that read not just "Darjeeling FTGFOP1" but "Carbon-conscious, sea-shipped, blockchain-traced." Is transparency enough? If a company discloses its emissions but continues unsustainable practices, does transparency absolve or expose? The tea industry must grapple with the difference between data and accountability.

The evolving cartography of tea freight is not just about routes and rates - it is about values. It asks us to redraw the map, not in terms of geography but in

terms of ethics. The old map had ports and prices; the new map has emissions, traceability, and trust. This cartography is dynamic. It shifts with climate reports, trade agreements, and technological breakthroughs. It is a living map, one that demands constant revision. And it is a shared map - one that requires collaboration between growers, exporters, regulators, technologists, and consumers.

Tea freight today transcends commerce - it embodies conscience. As climate, conflict, and technology reshape the geography of trade, every shipment becomes both a vessel of value and a statement of virtue. The future of tea will not be defined by how far it travels, but by how responsibly it moves. In this new diplomacy, the tea industry must become cartographers of care. It must chart routes that honour both leaf and life, both profit and planet. Because in the end, the true measure of tea is not just in its taste - but in its trace.



Asmita Khanra
Freelance Writer



A GEOSTRATEGIC BREW

How tea forged empires and trade wars



Tea may seem unassuming, but its journey from plantation to pot once dictated the rhythms of empires, kindled revolutions, and redrew maps. Long before semiconductors became chess pieces in the new world order, the global appetite for tea propelled merchants and monarchs into fierce rivalry - transforming the humble leaf into a catalyst for upheaval, diplomacy, and enduring cultural exchange. This short feature draws the reader into both the historical gravity and contemporary relevance of tea, setting the stage for an exploration of its continuing influence in global affairs.

While semi-conductors maybe the flavour of the season in current geopolitics, the humble tea once held that coveted position. So mighty was the brew that its significance transcended the teapot into economic, politics and culture, shaping the course of history in ways that continue to resonate today. The parallels between the tea trade of the 18th and 19th centuries and today's trade war are striking, each shaped by economic dependence, political rivalry, and the struggle to control the terms of exchange. Tariffs, trade deficits, export bans, and smuggling (terms that dominate the language of today's trade war) were just as familiar in the era of the global tea trade, when imperial powers and merchants clashed over profit, access, and control. Long before Donald Trump started upending the global order with his favorite word 'tariff', tariffs were upending global orders. In the late 18th century, it was tariffs on tea that set off a revolution that established a new order. The British Parliament, through acts like the Townshend Acts and the Tea Act of 1773, imposed tariffs on tea in the American colonies while granting the East India Company

exclusive rights to export tea directly - effectively sidelining colonial merchants and consolidating control over the tea trade. The colonists (people of British origin who settled in North America) who had no representative in the British parliament vehemently opposed this unilateral imposition of tariffs and refused to pay it. This set the stage for the Boston Tea Party kick starting the American Revolution. Colonist dressed as Mohawk Indians dumped 342 chests of tea into the Atlantic Ocean from British ships. It was a "tea party" in name only - less about dainty pastries and polite conversation, and more about rebellion, disguise, and a midnight act of defiance. Tea's deep roots in British culture made it the perfect symbol for colonial defiance and for uniting the thirteen American colonies. The Boston Tea party laid the foundation for further resistance which ultimately culminated in the Declaration of Independence in 1776. Like a brew whose aroma keeps drawing you back for just one more sip, the defiance of the Boston Tea Party in December 1773 lingered in America's political consciousness. In 2009, that enduring symbolism was revived in the Tea Party movement, sparked by opposition to federal bailouts and the

Affordable Care Act, infusing the Republican Party with small-government ideals, tax resistance, and a populist challenge to political elites that culminated in Donald Trump's rise and war on the status quo.

Donald Trump's *casus belli* for the trade war he has unleashed on the world is trade deficit. Trade deficits have been fuelling geostrategic calculations for centuries. In the 19th century, it was the basis for the Opium Wars between Britain and China. The Opium wars were as much about opium as it was about tea. Europe's deep affinity for tea, entirely imported from China, elevated it beyond the realm of a mere commodity, making it a prized cultural staple. The Chinese, in turn, accepted silver as the chief currency for this lucrative trade. As China had little demand for British goods the massive demand for tea back in Europe caused Britain (who dominated the tea trade) to run out of silver to buy tea from China. The solution devised to fund this deficit was illegal smuggling of opium (mostly grown in Bengal Province) into China in return for silver. The insidious effects of opium extended beyond the individual, seeping into Chinese society, politics and economy due to the sheer scale of the trade. This prompted the Chinese to destroy over 20,000 chests of opium laying the foundation for the Opium Wars. This led to two wars, in which Western powers forced open China's ports, secured territorial gains, legalised the drug, and entrenched unequal treaties that eroded China's sovereignty. While the Opium Wars ushered in China's "Century of Humiliation," they also cemented Hong Kong's place at the crossroads of trade and empire. Defeat forced China to cede Hong Kong to Britain transforming a small fishing port into an imperial foothold born out of global thirst for tea. Hong

Kong embodies the very essence of tea, its enduring aroma, layered taste and lingering influence, leaving an impression that echoes through generations. Today, its role as a financial hub, a gateway between China and the world, and even its distinctive hybrid tea culture can all be traced back to the original leaf.

Today, tea lacks its former weight in global economics, yet its geostrategic legacy endures. India stands as the world's second-largest tea producer, with nearly 70% of its output coming from a politically sensitive belt stretching through Assam and the Siliguri Corridor - a "chicken's neck" of territory sandwiched by China, Bangladesh, and Nepal. Instability in the tea sector here could reverberate throughout South Asia's security architecture.

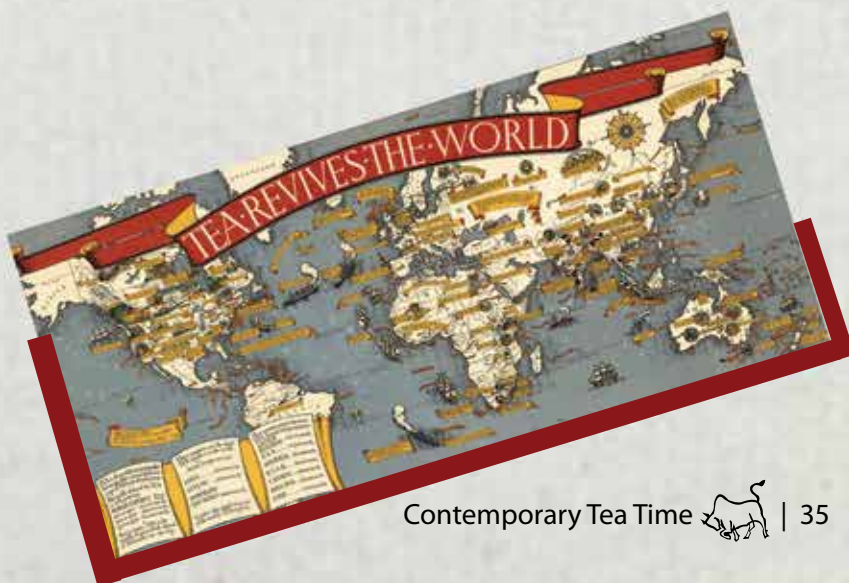
India's tea economy weaves local livelihoods with international power plays: border tensions with China, water-sharing disputes with Bangladesh, and shifting allegiances with Nepal, all intersect in this tea-rich zone. As "soft power" and economic security intertwine in the 21st century, the humble tea leaf continues to serve as a subtle yet potent force in India's regional calculus.

Reading the modern tea leaves

Although technology and high finance eclipse tea's former strategic dominance, the forces that shaped its past - resource control, market access, cultural symbolism, and the politics of taste - persist in new forms today. Recognising tea's historic role offers refreshing perspective on how everyday commodities can underlie decades, or even centuries, of global power struggles.



Saurav Nandi
Director, Topical Tea





WELL-STIRRED WELLNESS

How tea became America's superfood

The ritual used to be simple: coffee at dawn, water throughout the day, maybe a glass of wine at night. But somewhere between the rise of wellness culture and Americans' growing distrust of sugary beverages, something quietly revolutionary happened. Tea moved from the margins of American culture straight into the mainstream. Today, 159 million Americans sip tea daily, and in 30 states across the nation, it has surpassed coffee as the beverage of choice (The Hill, 2024; Matcha.com, 2024).

Welcome to America's tea renaissance, where wellness meets obsession, science meets Instagram aesthetics, and your grandmother's daily ritual suddenly feels like the chicest health hack of the decade. The transformation speaks volumes about evolving consumer consciousness. The American tea market, currently valued at approximately \$12 billion in 2024, is projected to reach nearly \$13.19 billion by 2033, with the functional tea segment expanding at a compelling compound annual growth rate of 6.1% (IMARC Group, 2023; DataHorizon Research, 2025). This isn't casual consumption. It's a deliberate, scientifically informed pivot toward wellness as both philosophy and lifestyle.

Let's talk about what's actually happening in that delicate cup. Tea isn't just a beverage - it's basically molecular magic. Packed with polyphenols and epigallocatechin gallate (EGCG), tea functions like a wellness bodyguard, neutralising free radicals before they can wreak havoc on your skin, energy levels, and overall vibe (Eureka Select, 2020; National Institutes of Health, 2023). These compounds don't operate through marketing narratives or vague



wellness claims. They demonstrate measurable, reproducible effects documented across peer-reviewed scientific literature.

Here's where it gets really interesting: different teas are essentially different wellness treatments in leaf form. White tea, with its minimal oxidation, maintains the highest antioxidant concentration among true teas. Matcha, the powdered Green tea that has captured contemporary aesthetic imagination, delivers approximately 945 mg of antioxidants per serving (Real Simple, 2025; Consumer Reports, 2022). Green tea's EGCG compounds have demonstrated cardiovascular protection, with research suggesting that one to two cups daily may reduce heart disease risk by 11 to 16 percent (Consumer Reports, 2022). Black tea - America's most consumed variety at 84% of the market - enhances vascular function and promotes beneficial microbial diversity in the gut microbiome (National Institutes of Health, 2024; National Institutes of Health, 2017).

Forty-five percent of American tea consumers actively seek formulations marketed for immune support, while 43% prioritise products with documented antioxidant content (IMARC Group, 2023). The functional tea market, already valued at \$8.71 billion in 2024, is anticipated to expand substantially to \$13.19 billion by 2033 (DataHorizon Research, 2025). This segment encompasses immunity-enhancing blends incorporating elderberry and echinacea, digestive wellness formulations, adaptogenic stress-management teas, and metabolic support varieties (DataHorizon Research, 2025). The sophistication lies not merely in product availability but in consumers' informed engagement with these options.

What's perhaps most fascinating is the cultural pivot behind it. Wellness influencers, microbiome researchers, fitness coaches, and even baristas have helped tea acquire a contemporary vocabulary - less about quaint comfort, more about longevity, energy optimisation, and intentional living. Kombucha taprooms and matcha cafés now stand alongside cold-pressed juice bars, signaling how tea has become the emblem of a mindful lifestyle economy fuelled by both science and sobriety shifts.

America's embrace of tea as a wellness cornerstone

represents something more philosophically substantial than transitory consumer preference. It reflects cultural recognition that genuine wellness emerges not from quick-fix interventions or complex pharmaceutical solutions, but from intentional practices grounded in both ancient wisdom and contemporary scientific validation - from choosing mindfulness within an accelerated cultural moment.

The historical irony proves instructive. The nation that once made tea rejection a political statement now recognises it as essential to contemporary health consciousness. As more Americans discover what consistent tea consumption might contribute to their longevity - literally an additional 2.24 years of life, according to rigorous epidemiological evidence (National Institutes of Health, 2024) - the nation's tea renaissance demonstrates momentum rather than ephemerality.

Tea, in its American iteration, has become far more than beverage. It represents alignment with evidence-based wellness, appreciation for sophisticated simplicity, and recognition that the most powerful health interventions are often elegantly straight forward.



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FROM RELUCTANT HEIR TO TEA ADVOCATE

One factory visit changed everything

Most tea entrepreneurs inherit their passion along with the estate. Pinak Sharma inherited the estate but had to discover the passion himself. A Delhi student with no interest in the family business, and then on a reluctant routine factory visit, one manager took the time to explain. This is how everything changed.

Today, as owner of Vijaya Lakshmi Tea Company, Sharma is on a mission to help India rediscover what real Assam tea tastes like - not the dust-grade powder most of us know, but the complex, aromatic brew that made the region famous.

In his own words: "Tea wasn't my destiny - until it was." Here's how it all went...

My journey into tea didn't follow the typical script. There was no generational legacy, no childhood memories of garden walks with a tea-planting grandfather. I was a student in Delhi, absorbed in studies completely unrelated to tea, content with the trajectory of my life.

Tea found me out of necessity, no passion. As an only child, family responsibility brought me home to Assam during vacations. I'd help my father maintain our garden and make routine visits to factories to supply our green leaf - mechanical work that felt far removed from any sense of purpose.

The turning point

Then I met Mr. Ashish Bartwal, a factory general manager who would unknowingly alter the course of my life. During one factory visit, he invited me onto the production floor and walked me through each stage of tea manufacturing. As we moved past the withering troughs, through the rolling machines, and into the oxidation rooms, he explained the science behind each process - the delicate balance of

temperature, timing, and technique.

That's when it clicked: making exceptional tea wasn't just tradition or agriculture. It was science, art, and precision combined.



Mr. Pinak Sharma

I returned to Delhi, unable to shake off what I'd witnessed. I devoured books on tea processing, studied the chemical compounds that create flavour, researched cultivation techniques. What began as curiosity evolved into obsession, then calling. Eventually, I established my own tea factory, determined to be part of the solution to a problem I was only beginning to understand.

Silent lessons

If one person shaped my work ethic, it's my father. He taught

me what true dedication looks like - not through words, but through example. He worked with quiet determination, never seeking recognition, simply doing what needed to be done with unwavering discipline.

From him, I learned that passion without discipline

burns out quickly, while discipline without passion leads to hollow achievement. The balance between the two became my guiding principle - one I apply to every aspect of my work in tea today.

India's forgotten treasure

Here's what troubles me most: most Indians have never tasted what good Assam tea actually is.

We've drifted so far from authenticity that an entire generation associates tea with convenience - boiling water, adding dust-grade powder, masking bitterness with excessive milk and sugar. They have no reference point for what real tea should taste like: the complexity, the depth, the layered aroma of a properly brewed Assam cup.

Meanwhile, coffee has captured the imagination of India's youth. Not necessarily because it's superior, but because it's been marketed brilliantly - and because most young people's only experience with tea has been weak, flavourless, and disappointing.

This is what I want to change. I want to create a movement where Indians don't just drink tea - they experience it, the way one would savour fine wine or specialty coffee.

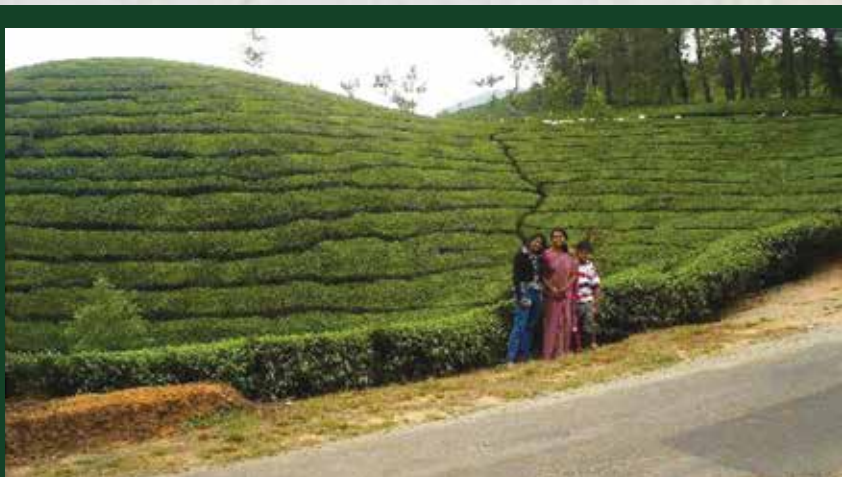
sacrificed. Now, this degraded product is what most households consider normal. When people taste high-quality tea, they often find it "too strong" or "too bitter" - not recognising that their palates have been conditioned by inferior products.

This cultural shift in taste may be the most damaging outcome of all. When the choice is between robust, flavourful coffee and watered-down tea, the decision is obvious. Rebuilding our relationship with quality tea must start from the ground up.

The untapped goldmine

Tea is the second most consumed beverage in India after water. Think about that scale of opportunity.

Despite this massive market, tea hasn't received the innovation or attention that coffee has. We have the legacy, the land, the expertise - but we haven't yet connected emotionally with modern consumers the way coffee brands have. This gap represents enormous potential. Innovation is needed in brewing methods, product formats, and how we present tea to younger audiences. The market is ready for those who can bring fresh perspectives while honouring tradition. The advantage we have? Good tea, once tasted in its purest form, is unforgettable. We just



The great quality compromise

The decline in Indian tea quality wasn't accidental. It was systematic, driven by corporations prioritising margins over excellence. The industry moved progressively downward: from whole leaf to Orthodox, then to CTC (crush-tear-curl), and finally to dust grade.

With each step, flavour, aroma, and complexity were

needed to help people rediscover it.

Innovate or stagnate

Moving the industry forward requires innovation across every dimension - not just flavour, but form, function, and accessibility. Making exceptional tea shouldn't feel complicated or intimidating. We need ready-to-drink options, elegant single-serve solutions, and simple home brewing devices.

Packaging must tell stories. Education must be engaging. We need to make tea aspirational again - something people discuss, share, gift, and integrate into their lifestyle.

This transformation won't happen overnight, but with persistence and creativity, tea can become a vibrant part of modern Indian culture once more.

The new wave - beyond the cup

I'm encouraged by the emergence of young entrepreneurs in tea. This generation understands branding, digital engagement, and global trends. They're unafraid to experiment and challenge outdated norms. Their entry is both timely and essential. Only by combining traditional wisdom with future-focused innovation can we truly revive and redefine the tea industry.

Tea has become my passion and life's work, but it doesn't define me entirely. I believe in balance - reading books that challenge my thinking, and most importantly, spending quality time with family. These moments ground me and fuel my determination.

Many teachers, one path

I've never had a single mentor. Instead, I've been fortunate to learn from numerous experts and practitioners, each contributing unique insights. Some taught technical precision - oxidation rates, temperature control. Others shared wisdom about sourcing, grading, consumer psychology.

Every lesson matters. Every teacher shaped my journey. I carry their collective wisdom forward.

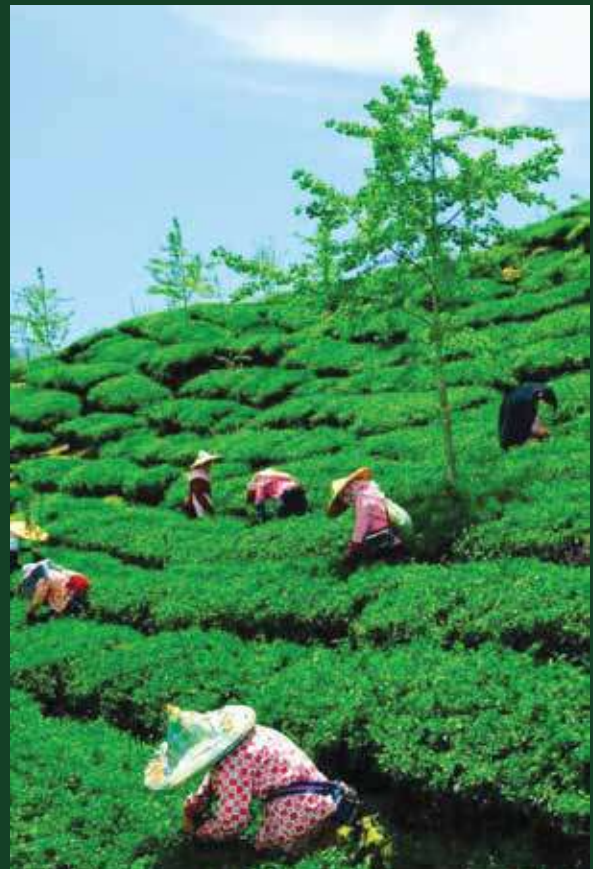
The opportunity is now

The tea industry isn't lacking opportunities - it's waiting for people who can recognise them. Whether in manufacturing, branding, storytelling, or retail, the possibilities are endless. They don't need to be created from scratch; they already exist. What's required is an open mind and fresh eyes.

Comparing generations is neither fair nor useful. While predecessors built infrastructure and perfected manufacturing, we must focus on innovation, marketing, and global expansion. Both contributions are essential. Now it's our turn to leave a meaningful mark not by erasing history, but by building upon it.

Tea is simultaneously an ancient tradition and a

modern opportunity. The future doesn't require abandoning what came before. It requires reimagining it for a new era.



Kavita Tamang
Contemporary Brokers, Guwahati



TRA TOCKLAI AGM

Unveiling AI tools, wellness teas & flags funding crisis



Outgoing Chairperson Ms. Palchoudhuri addressing the meeting

Kolkata, September 5: The Tea Research Association's 61st Annual General Meeting showcased breakthrough innovations while sounding an urgent alarm about India's research funding gap with China. TRA unveiled a decaffeinated Green tea powder developed from Assam's elite clones, containing 75% less caffeine than regular Green tea while retaining high antioxidant levels. Secretary Joydeep Phukan positioned it as a potential competitor to Japanese Matcha, which faces global supply shortages despite soaring demand.

"This could make Assam and Bengal a global hub for high-value wellness teas," Phukan said at the launch, officiated by Tea Board Deputy Chairperson Arunita Phukan Yadav.

The Association's scientists also launched a patented AI-based tool that uses machine learning to identify drought-resistant tea plants through image analysis. The innovation promises to accelerate breeding programmes and strengthen climate resilience - critical as weather patterns grow increasingly unpredictable.

In her keynote address, outgoing Chairperson Nayantara Palchoudhuri delivered a stark warning: China invests ₹110 crores annually in tea research,



Launching of decaffeinated Green tea powder at the AGM

while India spends just ₹30 crores. The crisis deepens as over half the Indian tea industry defaults on research dues. "Our scientists continue delivering excellence despite these shortfalls," Palchoudhuri said, announcing a High-Level Committee to explore new revenue models, including property development and expanding membership to small growers and the bought-leaf sector. Dr. A. Arunachalam of ICAR Central Agroforestry Research Institute, Jhansi, advocated integrating tree-based systems into tea estates, citing benefits for climate resilience, soil health, and additional revenue streams. Director of TRA Tocklai Venkat Selvaraj outlined TRA's year of progress: new climate-resilient clones, advances in pest management, IoT-based precision agriculture, and specialty tea development. The meeting concluded with Suneel Singh Sikand, CEO of Rossell Tea, taking over as Chairman from Palchoudhuri.

Key takeaway: TRA is innovating rapidly, but without industry-wide funding commitments, India risks losing ground to better-resourced competitors.

Source: Tea Research Association

INDIA INTERNATIONAL TEA CONVENTION Kochi, 18-20 Sept'25



(Left) A defining sip at Kochi Convention: One of the esteemed judges, Mr. I. S. Sukarchakia, MD, Contemporary Brokers, embodies tea's global pinnacle.

(Right) Panel of distinguished judges.

RE-IMAGINING DURGA PUJA THROUGH TEA

**Alipore Sarbojonin 2025
pandal celebrated rebellion
reverie and reverence**



Durga Puja in Kolkata has grown into one of the world's most sensory-rich spectacles, with pandals crafted as artistic masterpieces.

Alipore Sarbojonin's 80th Durga Puja transformed the festival into an ode to tea, capturing its role from ancient legends to pop culture and everyday rituals. The "Cha-Pan Utar" pandal, inspired by a Chinese tea house, swirled with stories, sketches of tea-pluckers, playful murals of Dolly Chai Wala with Bill Gates, and a striking fighter-jet installation linking tea to wartime realities.

Inside, visitors wandered through a tranquil chamber echoing Buddhist chaityas, where pillars and walls bore painted narratives of tea's journey witnessed by revolutionaries, thinkers, and poets. The centrepiece, a statue of a tea-plucker woman, stood in silent tribute to generations of plantation workers, surrounded by figures and haunting tales of hardship.

With Thangka art gleaming overhead and a meditating Atish Dipankar painted on the ceiling, the entire space became a living, breathing fusion of heritage and social reality. Created by artist Anirban Das and his team of 150 Art College students, the exhibit showed how tea connects every stratum, comforting people in palaces and street corners alike. Club secretary Kaushik Bhattacharya summed it up: "The pun in 'Cha-Pan Utar' is very much intended, it signifies all the ups and downs of tea's journey." Tea isn't just a beverage it's a silent rebel and beloved companion, steeped in every chapter of our lives. To sum up briefly, it was far more than a mere festival craft it was an immersive experience that boldly wove together art and history.

Srinjini Swar

SILIGURI'S MANUAL TEA AUCTION **Keeps the craft of Diwali** **trading alive**

Another year of the Manual Auction and being part of it feels nothing short of beautiful. In an era dominated by screens and algorithms, there is something profoundly special about watching the age-old rhythm of the auction floor unfold right in front of you. This process, governed not just by price but by precision, instinct, and a deep human understanding, is the very essence of the unspoken hand that continues to guide the trade.

The energy, the precision, the quick calculations, and the unspoken understanding between brokers and buyers all came together on the Diwali tea auction at Siliguri Tea Auction Committee on November 3rd 2025, to create an atmosphere reliving the majestic aura of the past in the dynamism of the time now.

In that single room, decades of expertise met the vibrance of a living tradition. Every raised hand, every nod, and every lot offered carried the weight of history and the promise of a new season.

Even in an era of digitalisation, the Manual Auction reminded us why the human element remains irreplaceable in tea trading. It is not just a system - it is a craft, an instinct, and a culture.

Being able to witness it once again is a reminder of why tea continues to be a world of depth, discipline, and quiet passion.



Siliguri's Manual Tea Auction

Ena Bandyopadhyay
Contemporary Brokers, Siliguri

GLOBAL DUBAI TEA FORUM 2025 **Spotlights collaboration amid** **market shifts**

The Global Dubai Tea Forum 2025 convened leading voices in the tea industry, featuring ESTA members Anil Cooke, Dan Bolton, and Kurush Bharucha. This year's dialogue concentrated on the impact of shifting trade alliances, rising tariffs, and geopolitical uncertainties on global tea markets.

Industry leaders emphasised that navigating these challenges requires stronger collaboration, meaningful innovation, and agility to adapt quickly. Their insights provide crucial guidance for producers, traders, and marketers working within an increasingly complex and evolving global tea landscape.

E. B.



Global Dubai Tea Forum 2025

SHAIBAL DUTT TAKES CHARGE As MD & CEO of Goodricke Group



Mr. Shaibal Dutt

Goodricke Group Limited, a constituent of Camellia Plc, UK, has appointed Mr. Shaibal Dutt as its Managing Director & Chief Executive Officer with effect from September 6, 2025.

An industry professional since 1994, Mr. Dutt holds a bachelor's degree in political science from Hindu College, University of Delhi. He has spent over 16 years in plantation operations across Dooars, Assam and Darjeeling, and later headed the Branded Tea Division as National Sales Manager from 2012. Since 2018, he has been associated with the Group's corporate leadership at its Kolkata headquarters, overseeing multiple estates.

Mr. Dutt brings with him a unique blend of plantation insight, bulk tea expertise and branded retail experience.

SURVIVAL IN A SURPLUS ITA's 142nd AGM calls for 're-imagined ecosystem' amid financial stress

KOLKATA: The grandeur of the LaLiT Great Eastern on October 9 provided a stark backdrop to the sombre realities discussed at the 142nd Annual General Meeting of the Indian Tea Association (ITA). While Chairman Mr. Hemant Bangur opened proceedings by acknowledging India's rise as a \$4.2 trillion economic powerhouse, he laid bare a grim paradox: the nation's oldest organised industry is battling acute financial stress, caught in a pincer movement of global oversupply and stagnant realisations.

Addressing a packed house that included Chief Guest Dr. Ravi Kota, Chief Secretary of Assam, and international diplomats, Mr. Bangur described the sector at a "decisive crossroads." The industry is grappling with a global tea surplus of 418 million kg, a figure that has decimated prices even as India's own production rebounds. The Chairman's address was a plea for equilibrium, advocating for a minimum



Mr. Hemant Bangur

import price to counter the "double volume" influx of low-duty teas from Kenya and Nepal, and urging the Centre to hike RoDTEP incentives to 5–6% to safeguard Orthodox exports to traditional strongholds like Russia and Iran.

However, the meeting moved beyond a mere laundry list of grievances to a roadmap for survival. "We must re-imagine our ecosystem," Mr. Bangur declared, positioning AI, IoT, and drone-assisted farming not as futuristic luxuries but as immediate necessities for cost optimisation. This vision was paired with a strong commitment to sustainability, evidenced by the ITA's new partnership with Solidaridad Asia to push regenerative agriculture in the wake of climate disasters, such as the recent North Bengal floods.

The narrative of transformation was further amplified by Dr. Kota. In a candid address, the Chief Secretary acknowledged the seismic shift in the industry's structure - where Small Tea Growers now command over 54% of production - calling it a "democratization" of the sector. While he celebrated the global resurgence of "Brand Assam" and the move toward selling "stories rather than just bulk tea," Dr. Kota did not shy away from the liquidity crisis. He significantly suggested reviving the RBI's 2002 working group framework for loan restructuring, offering a glimmer of hope for cash-strapped estates.

As the session concluded, the consensus was clear: the era of tea as a self-running colonial legacy is over. The path forward, as outlined by both industry and government, lies in a hard pivot toward traceability, strict import safeguards, and a "soil-to-shelf" digital integration that demands sustainability be non-negotiable.

Source: Indian Tea Association



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FROM NORTH BENGAL'S SOIL TO GLOBAL CUP **A first-gen planter's rise to eminence**

In the heart of North Bengal, where the air carries the fragrance of freshly made tea, stands *Puspa Tea Estate*, a name that has grown from a humble dream into a proud legacy. Founded by Mr. Sukumar Roy, this 200-acre estate is not just about tea; it is about determination, hard work, and the belief that it's never too late to start something new.

Mr. Roy, now 72 years old, started his journey in the tea industry at the age of 36. Before that, he was involved in the brick business - a field he knew well. But his heart pushed him to explore something different, something that would leave a lasting impact. And so, in 1989, he began his journey in tea by establishing *Puspa Tea Estate*.

That same year, he set up his first Bought Leaf Factory (BLF) - *Sondeep Tea Factory*. It was the beginning of a new chapter for him. Back then, there were only around 20 factories in the region, and the business was quite new for a Bengali entrepreneur like him. Yet, with patience and perseverance, he slowly built his name.

The early years were modest. With only 2-3 lines of machinery, the factory made tea worth around 6-7 lakhs. Today, the group's annual production has grown to over 1 crore, a clear sign of how far they've come.

Over the years, the Roy family expanded its business steadily. After *Sondeep Tea Factory* in 2003, came *Puspa Tea Factory* in 2011, followed by *Roybari Tea Factory* in 2013, another *Roybari Factory* and *Sukumar Agro* in 2018, and recently, a new addition *Roy Co.* in 2025.

Their hard work and quality did not go unnoticed. In 2011, *Puspa Tea Factory* received the Rural Area Economic Development Award from the Business Association of India, recognising their contribution to the local economy and rural growth.

From a small office in Daspara, where it all began with land purchases and tea planting, the company now proudly operates from a well-established head office in Siliguri, set up in 2009. What started with just 7-8 employees has now become a strong family of over 200 people.

The journey was not without challenges. "Earlier tea had a margin, now there's much more competition," says Mr. Sondeep Roy, Sukumar Roy's son, who joined the business full-time in 2015 after completing his MBA from SIT. Financial crises, fluctuating green leaf costs, and changing market prices tested their resilience - especially during the 2020 lockdown, when tea prices were highly unstable.

Still, the family stood strong together. Sondeep's younger sister, Ms. Sweetie Roy, completed her MBA



Mr. Roy and Family

from UK in 2019 and now serves as the Director of Roybari Tea Company. Another key member, Mrs. Goldy Saha, leads as Director of Roy Tea Co.

Through the ups and downs, their focus has always remained on improving quality. "Quality-wise, our teas have improved a lot," says Mr. Sondeep proudly.

The Puspa Tea Estate story is not just about business growth - it's about the transformation of an entire region. When Mr. Roy began, Islampur and Chopra had just started exploring tea cultivation. Today, these areas are bustling tea zones, providing livelihoods to hundreds.

From a doctor's son to the first-generation planter and entrepreneur in his family, Mr. Sukumar Roy's story is a bold template of courage, vision, and relentless hard work. His belief that "it's never too late to start anything" continues to inspire many in North Bengal's tea industry. At the age of 72, Mr. Roy is not just embracing new ideas - he is actively shaping them. In sync with ongoing research, he is committed to innovation, whether through adopting sustainable farming practices or experimenting with new blends to meet evolving consumer tastes. His journey is not just about business survival; it's about redefining Indian tea for a new era, proving that passion and adaptability can thrive at any age.

Puspa Tea Estate stands today as a symbol of how dreams rooted in dedication can grow - just like a tea plant - from a small seed into something evergreen.



Abhijit Sengupta
Contemporary Brokers, Siliguri

Coming Next



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A TEArrific Journey Glittering in Gold: 50 Years of Contemporary Brokers

*Raise a toast to five decades of brewing brilliance! The commemorative edition of Contemporary Tea Time, Jan-March 2026, will celebrate the enduring legacy of Contemporary Brokers, featuring an insightful cover story by **Shri Prafull Goradia**, founder and Tea Titan, articles tracing the golden trail - past, present, and future.*





Client's Cuppa

A NEW DAWN Honouring a legacy, brewing the future



Mr. Deepak Kumar Sarma, Tea Connoisseur



Mr. Sauvik Sarma and Mr. Aditya Prakash with the team

There's a whisper of something truly special in the air today. It feels lighter, brimming with a hope that stirs the soul, and overflowing with the boundless possibilities of a new beginning. More than just the start of another week, this marks the opening of a deeply meaningful chapter in my life, one I've long dreamt of.

My father, Deepak Kumar Sarma, at 76, remains a vibrant testament to passion and dedication. For over five remarkable decades, he has poured his heart and soul into the art of tea, first with Kamellia Tea, then blossoming into Kumollia Tea. This isn't just a business; it's a testament to his unwavering expertise, the emotional connection he forged with every leaf, and his relentless, inspiring pursuit of unparalleled quality. It's a legacy woven with stories, sacrifice, and an enduring love for tea.

Today, with immense pride and a full heart, I embrace this cherished legacy. I'm stepping into a new role, not just to continue, but to elevate Kumollia Tea to even grander heights. Our vision is beautifully simple, yet profoundly ambitious: to share the authentic warmth and rich heritage of Assam tea with every home, and every heart, across the globe.

To my cherished family, my steadfast cousins, my dear friends, my trusted colleagues, and my incredible cricket team; your unwavering support, through every triumph and every challenge, has been my constant anchor. Thank you, from the depths of my heart, for believing in me, for seeing this dream with me.

Here's to new beginnings, to bold dreams taking flight, and to the timeless, comforting embrace of a perfect cup of tea.

Please, wish me luck as I embark on this heartfelt journey.

Tea-Cheers,
Sauvik Sarma

Together, let's steep Kumollia Tea into the fabric of the world's memories!





BOLLYWOOD & BEYOND

India's entertainment industry rewrites its script

The Indian entertainment industry is undergoing a seismic shift - where once Bollywood reigned supreme, now a kaleidoscope of regional cinema, OTT disruptors, and digital influencers are elbowing into the spotlight. It's no longer just about the Khans and Kapoors; it's a playground for Gen Z storytellers, tech-driven studios, and unapologetically experimental content. As one Mumbai-based producer cheekily quips, "We've gone from singing under Swiss waterfalls to decoding trauma in 4K clarity."

The rise of regional powerhouses

Tamil, Telugu, and Malayalam cinema have long been respected for their craft, but today, they're setting pan-India benchmarks. After Pushpa, RRR, and Leo, Southern superstars command bigger budgets and wider releases than many Hindi films. Industry insiders suggest that the next wave will be bilingual films tailored for both local and global audiences, leveraging AI dubbing tools for seamless multi language launches.

"The line between Bollywood and regional is gone," says Aarti Bansal, a casting director who's worked across industries. "It's now just Indian cinema - and the South is setting the tone."

Good old-fashioned family drama or love story with a twist isn't what you get to see as often as a breather. Murder mystery or 'who-done-it' flicks with plain, classical humour aren't on the horizon in Hindi and Bengali cinema of modern times for the mobile viewers as often as they should be. The Bengali presentations are more of an amateurish improvisation of old TV serials. Comparatively, the Bangladeshi productions and the contents in general are much better. I do watch a lot of Malayalam cinema and OTT. Apart from the portrayal of sexism and power dynamics, they're of very high standards both in terms of the linear narrative and visual content. They're usually dark humour content driven by literature, with a higher dose of violence, but realistically photographed to create a believable scenario.



OTT: King, but not unchallenged

OTT platforms like Netflix India, Amazon Prime Video, and JioCinema are still thriving, but audiences are showing signs of fatigue from overdone thrillers and crime dramas. The new appetite? **Slice-of-life narratives, dark comedies, and docu-dramas based on real scams and unsolved mysteries.**

A writer's room insider from a major OTT platform tells us, "The brief is now clear: real, raw, and short. Eight episodes is too much. We're seeing demand for 3-to-5-episode limited series, almost like digital novellas."

Expect platforms to pivot towards AI-enhanced script vetting, hyper-local stories, and short-form vertical content made for mobile-first viewers.

Influencers enter stage left

In 2025, creators aren't just promoting films - they are the stars. YouTube and Instagram personalities are landing lead roles, production deals, and even hosting their own talk shows. "It's all about engagement metrics," says Pranay Malhotra, a talent agent in Mumbai. "If someone brings 10 million followers, a producer sees that as 10 crore in guaranteed publicity."

But there's a downside: the performance bar is still inconsistent. "We've had influencers on set who couldn't hit a mark," jokes a seasoned DOP. "Great on Reels,

but lost on reels of film.”

Theatrical comeback - with a twist

Despite the OTT boom, box office is bouncing back - but only for event films. Think mythological spectacles, franchise action flicks, and nostalgia-packed remakes. Theatres are reinventing themselves with immersive tech, 4D effects, and AI-curated trailers to woo back the crowds.

Cinema chain insiders reveal plans to introduce “Fandom Fridays”, where audiences vote weekly on which old classic they want to watch on the big screen. It’s a retro meets algorithm.

The big trends to watch

AI in Pre-Production: Script generation, casting simulations, and even moodboard creation are now aided by AI. A major studio is already piloting AI-driven market testing for plots before the script is locked.

Crossover Collaborations: Watch for more Bollywood-K-pop and Tollywood-Hollywood hybrids. A Tamil star is already in talks with a Korean director for a 2026 sci-fi venture.

Eco-Conscious Productions: Sustainability is no longer niche. From solar-powered sets to virtual production studios (like the ones used in *The Mandalorian*), going green is becoming a budget and branding win.

The final frame

The Indian entertainment industry isn’t just evolving - it’s mutating beautifully. From OTT war rooms to influencer-led casting calls, and AI-curated trailers to multilingual debuts, the game has changed. And for those behind the scenes? The mantra is clear: **adapt fast, or fade to black.**



Shilbhadra Datta
Short Film Maker &
Photographer



Sanjay Bagchi

The tea fraternity mourns with deep sorrow the sudden and untimely demise of Mr. Sanjay Bagchi, Secretary of the Surma Valley Branch of the Indian Tea Association, Silchar, Assam, who passed away on **21st October 2025**. His dedicated service, quiet efficiency, and courteous demeanour earned him the respect and affection of all within the tea fraternity.

May his soul rest in eternal peace.



Prodosh Kr. Sen

Mr. Prodosh Kumar Sen, former Chairman of J Thomas & Co Pvt Ltd., passed away on **28th November 2025**.

May his soul rest in eternal peace.

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A JOURNEY IN TEA

Blending the art and alchemy of tasting

This article is the continuation (second part) of three-part reflection on Kurush Bharucha's remarkable career in tea tasting. The final part will appear in CTT's in January-March 2026 issue.

While I always highlighted the role of artful processing, I also celebrated Black tea's naturalness and simplicity. People often talk about its various processes - withering, maceration, oxidation, firing, sorting, and packing. But I like to strip it down to this: "all that's removed is moisture... and all that's added is air." That's how pure and natural it is to turn green leaves into Black tea! (I sometimes use the analogy of an apple or banana browning when exposed to air after a bite.)

As for styles and craft, make no mistake - the Chinese remain masters of this art. China is the only country producing all six types of tea: White, Green, Yellow, Oolong, Black, and Pu'erh. Across its 16 tea-growing provinces, tea makers manipulate the leaf like nowhere else, shaping it into every imaginable form while coaxing out new nuances. No wonder it's often said there are more teas in China than there are wines in all of Europe!

As regular consumers of food and drink, we all understand tastes, flavours, and textures - the smoothness of chocolate, the tang of citrus, the surprise of strawberry, the fire of ginger, the sweetness of honey, the bitterness of coffee, and the subtlety of cinnamon. Tea tasters draw on similar associations. Many slurp, most taste with their eyes. Some blow into the dry leaf in their palm, drawing out moist vapours for aroma; others brew and sniff the hot volatiles rising from the cup.

In my early days, it was about joining my senior tasters at every tasting table and learning iteratively: **taste → listen → associate → understand → repeat.** My senior would assign descriptive attributes to each tea leaf and its liquor, and I imprinted those words in my mind. At the same time, I was also subconsciously

learning through personal association. A "smoky" Dooars tea reminded me of an ashtray; an Assam with "blackcurrant" notes evoked strawberry jam; a Nilgiri "cedery" tea smelled like pencil shavings; a Kanan Devan "spicy" tea reminded me of pepper. Indeed, the art of tasting is the art of association. Not all tongues are equal; each person's journey depends on their own experiences.

Travelling through diverse producing countries and consumer cultures expanded my tea vocabulary. While a broad tea lexicon is shared globally, I was fascinated by the subtle differences in language and perception depending on where I was on the "leaf-to-lip" journey. Producers, brokers, traders, importers, wholesalers, big brands, niche shops, street vendors, RTD manufacturers, start-ups - each had their own "TEAminology." And tea vocabulary isn't just about words; it also draws on **visuals, rituals, ceremonies**



Mr. Kurush Bharucha

and imagery from other languages and cultures: Zavarka (strong tea concentrate) in Russia, Karak (hearty tea) in the UAE, Dilnesheen (a pleasant cup) in Iran, Taaza (invigorating freshness) in India, Danedaar (granular leaf) in Pakistan, Tavşan Kani (a desirable “rabbit’s blood” colour) in Turkey... the list goes on.

Today, we see “flavour wheels” for almost everything - coffee, whisky, wine, beer, cheese, chocolate and herbs. These are visual tools that diagrammatically demystify and map the landscape of flavour directions. Over the years, I too have developed my own mental map to navigate this tapestry. With Black tea, for example, I start with a broad family (say “Fire”) and then search deeper for subtle sub-notes: biscuity, smoky, ashy, roasted, burnt. Broad flavour families include floral (jasmine, rose), fruity (peach, grape), vegetal (fresh grass, herbaceous), aquatic (marine, seaweed), woody (cedar, bark), spicy (pepper, cinnamon), and so on.

From the beginning, I learned the importance of cultivating the habit of assigning words to taste. Our brains work with words. If you have a word for a flavour, it’s easier to recognise and remember. Growing your own vocabulary of descriptors will help you better communicate a product’s attributes - its sensorials and credentials - in clear, creative, and compelling ways.

Based on my journey, I would advise anyone building a tea vocabulary to first internalise some ground rules of sensory appreciation:

Understand the five basic tastes: sweet, sour, salty, bitter, umami

Recognise that the nose is far more sensitive than the mouth in detecting flavour

Remember that about 80% of what we “taste” comes from smell (think how food tastes dull with a stuffy nose and why tea tasters can’t work when they have a cold!)

Realise that Taste + Aroma + Texture = Flavour

Know that smell is tied to the limbic system of the brain, which stores memories and emotions. This is why certain scents calm us (lavender, sandalwood) or trigger nostalgia (pine trees of winter holidays).

Distinguish between bitterness and astringency.

Guard against pitfalls in language (for instance, many consumers use the word “bitter” for any tea they dislike not necessarily one that truly tastes bitter!)

(To be continued)





Auction Leafline

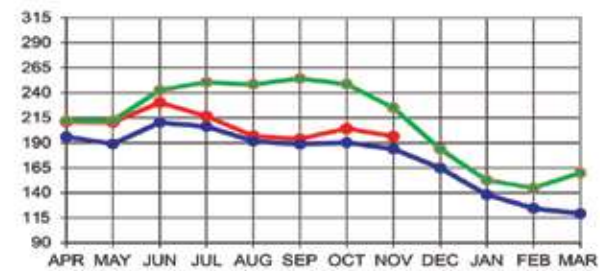
N. India Market Graphs April to November

North India - CTC Leaf & Dust

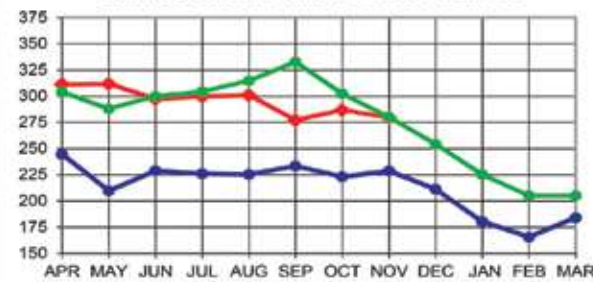
Months	2025/26	2024/25	25 vs 24	2023/24	25 vs 23
APR	211.10	211.91	-0.81	195.81	15.29
MAY	210.52	212.11	-1.59	188.86	21.66
JUN	230.03	242.39	-12.37	210.15	19.88
JUL	216.50	250.47	-33.98	206.17	10.32
AUG	196.78	248.17	-51.39	191.60	5.18
SEP	193.79	254.06	-60.27	188.50	5.29
OCT	204.08	248.46	-44.38	190.13	13.90
NOV	196.22	224.91	-28.69	183.92	12.30
DEC		183.59		164.70	
JAN		152.62		137.97	
FEB		144.69		124.52	
MAR		159.87		119.01	
April to November	205.34	240.99	-35.64	193.35	11.99

Dust : Excluding Orthodox Dust

Rs CTC LEAF & DUST N.I. AUCTION AVERAGE



Rs ORTHODOX LEAF N.I. AUCTION AVERAGE



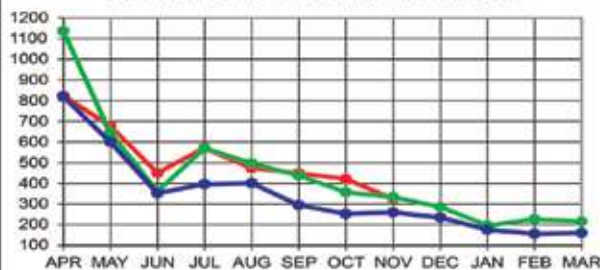
North India - Orthodox Leaf

Months	2025/26	2024/25	25 vs 24	2023/24	25 vs 23
APR	311.30	303.93	7.38	244.42	66.88
MAY	311.79	287.69	24.10	209.82	101.97
JUN	297.24	299.80	-2.56	228.77	68.47
JUL	299.77	304.22	-4.45	226.04	73.73
AUG	301.03	314.61	-13.58	225.35	75.69
SEP	277.10	332.59	-55.49	233.22	43.87
OCT	286.79	302.23	-15.43	223.23	63.56
NOV	279.66	279.92	-0.26	228.64	51.02
DEC		254.20		211.32	
JAN		225.13		180.22	
FEB		205.14		165.63	
MAR		205.08		184.01	
April to November	293.43	302.86	-9.44	226.32	67.10

Darjeeling Leaf

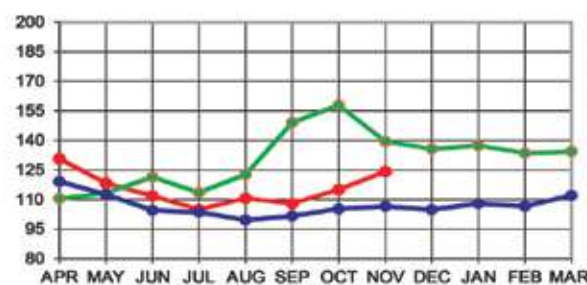
Months	2025/26	2024/25	25 vs 24	2023/24	25 vs 23
APR	822.49	1136.32	-313.83	819.19	3.29
MAY	676.24	643.20	33.04	599.39	76.85
JUN	450.20	361.23	88.97	352.18	98.02
JUL	570.74	569.62	1.12	396.47	174.27
AUG	473.40	496.89	-23.49	400.53	72.87
SEP	448.17	437.16	11.01	294.40	153.77
OCT	420.75	356.69	64.06	251.67	169.08
NOV	325.06	333.80	-8.74	259.42	65.63
DEC		285.33		235.24	
JAN		195.45		175.58	
FEB		226.14		156.02	
MAR		216.11		160.68	
April to November	477.99	442.23	35.76	363.72	114.27

Rs DARJEELING LEAF AUCTION AVERAGES



(*Subject to minor revision)

Rs CTC LEAF & DUST S.I. AUCTION AVERAGE



South India - CTC Leaf & Dust

Months	2025/26	2024/25	25 vs 24	2023/24	25 vs 23
APR	130.71	110.55	20.16	119.15	11.55
MAY	118.29	113.24	5.03	112.40	5.68
JUN	111.78	121.40	-9.62	104.51	7.28
JUL	104.85	113.45	-8.60	103.54	1.31
AUG	110.59	122.70	-12.11	99.61	10.98
SEP	107.86	149.00	-41.14	101.60	6.26
OCT	115.04	157.80	-42.76	105.21	9.84
NOV	124.19	139.38	-15.19	106.53	17.64
DEC		135.77		104.84	
JAN		137.40		107.97	
FEB		133.58		106.54	
MAR		134.42		112.11	
April to November	114.66	129.26	-14.60	105.77	8.89

Dust : Excluding Orthodox Dust



Compiled by Soumen Bagchi

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PRODUCT	SECTIONS	DOSAGE	INTERVAL
BIOKAD	Matured Fields	300ml/ha	45-60 days
BIOHUME	Weak Sections	300ml/ha	45-60 days
	Nursery	3 ml/litre of water	30-45 days
BIOFOS	Water Logging	300ml/ha	45-60 days
	Young plants	3 ml/litre of water	30-45 days

Executive Summary: 2-Year (2023-2024) field study in Assam and West Bengal by TRA Tocklai

- Highest yield increases were recorded with 350 ml/ha BIOKAD: 5.63% in Assam and 5.02% in Dooars, compared to Urea + Zinc (Current TRA foliar Recommendation).
- A 3.88% yield increase (Assam) and 2.77% increase (Dooars) were observed even at reduced fertilizer input (75% RDF + 300 ml BIOKAD/ha).
- BIOKAD reduced the residue of several pesticides in green leaves by 6% to 83%, demonstrating significant detoxification potential.
- Treatments with BIOKAD had a high benefit-cost ratio, 2.45 (Assam) and 2.88 (West Bengal), proving profitable economic viability.
- BIOKAD application significantly enhanced chlorophyll content in tea leaves.
- Tea made from treated bushes showed improved biochemical quality, indicating better liquor characteristics.
- Recommendation: Apply BIOKAD at 300–350 ml/ha for enhanced tea yield, quality, and chemical residue reduction in NE Indian tea estates.

A3 AMRA BIOSYS PVT LTD

81/1, SRP Koil Street, Chennai - 600 082, India

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BOOSTING TEA PRODUCTION WITH BIOKAD

More tea, less residue

Tea plantations in Assam and West Bengal are increasingly challenged by unpredictable weather patterns, pest pressures, and tightening Maximum Residue Limit (MRL) standards. In this context, Biokad has emerged as a breakthrough foliar input offering higher yields, superior quality, and detoxification of agrochemicals. Unlike conventional protein hydrolysate formulations that lose biological activity through harsh chemical or enzymatic processing, Biokad's amino acids are biotechnologically synthesised to remain bio-identical and immediately bioavailable. These amino acids integrate seamlessly into the plant's metabolic pathways, providing essential support under stress conditions such as drought, nutrient imbalance, chemical exposure, and pest attacks, thereby enhancing resilience and recovery.

What makes Biokad truly distinctive is its foundation in the BRAIN principle Biologically Regulated Amino acids Induced Nutrition. Rather than forcing growth like synthetic stimulants or hormones, Biokad's amino acids act as natural modulators and co-factors, improving nutrient assimilation, stress tolerance, and overall plant metabolism in harmony with physiological demand. This ensures sustainable productivity without compromising long-term plant health. By aligning with the tea plant's natural processes, Biokad delivers consistent field performance while supporting ecological balance, making it an indispensable solution for progressive tea estates seeking both productivity and sustainability.

Biokad and yield: Science-backed efficacy

In trials conducted by the Tea Research Association (TRA) at Tocklai, Jorhat and NBRRDC, Nagrakata over two seasons (2023 & 2024), Biokad consistently demonstrated improved plant resilience. Applications at 300–350 ml/ha in conjunction with 100% Recommended Dose of Fertilisers (RDF) improved yields by 9.63% in Assam and 7.91% in West Bengal compared to RDF alone (control). Notably, the standalone application of Biokad overwhelmingly outperformed the TRA-recommended Urea + Zinc foliar sprays by over 5%. It is important to emphasise that Biokad works best in synergist with other foliar nutrients; it is not a substitute for Urea and Zinc, but a complementary input that enhances overall efficacy. Beyond yield, Biokad improved shoot growth, internodal length, and chlorophyll content (up to 3.26 mg/g), indicators of stronger photosynthetic activity and leaf quality. Its efficacy stems from three mechanisms: chelation for enhanced nutrient mobility, stimulation of lateral roots for better absorption, and improved nitrogen efficiency through faster protein synthesis. With its bio-identical amino acids facilitating precise nutrient delivery, Biokad boosts productivity without compromising quality, offering tea plantations a scientifically backed, sustainable solution.

Due to their small molecular size and charge, Biokad's amino acids effectively "smuggle" bonded nutrients

Table 1

Effect of different treatments on tea yield in KMTH (kg made tea per ha)

**excerpts from TRA Tocklai report*

TREATMENTS	Tocklai, Jorhat		NBRRDC, Nagrakata	
	Yield (KMTH)	Diff over control	Yield (KMTH)	Diff over control
T1 (Control, 100% RDF)	2108	-	2232	
T2 (100% RDF + 250 ml BIOKAD per ha)	2205	+4.56	2303	+3.14
T3 (100% RDF + 300 ml BIOKAD per ha)	2258	+7.09	2346	+5.10
T4 (100% RDF + 350 ml BIOKAD per ha)	2311	+9.63	2409	+7.91
T5 (75% RDF + 300 ml BIOKAD per ha)	2190	+3.89	2294	+2.75
T6 (100% RDF + Urea + Zinc, TRA Recommendation)	2193	+4.00	2297	+2.89

across cellular barriers, ensuring precise delivery of nutrients when and where they are needed. While plants naturally synthesise amino acids in nanomolar (nM) concentrations, this limited supply becomes insufficient under stress conditions such as pest attacks, chemical exposure, drought, or nutrient imbalances. Under abiotic & biotic stress, plants require a significantly elevated pool of free amino acids for cellular repair, osmoprotection, and detoxification. Foliar supplementation with Biokad under these conditions aids in restoring homeostasis and promoting recovery – core pillars of plant resilience in modern agriculture.

Detoxification and Reduction of Residual Chemicals (MRL)

One of Biokad's most critical roles is its proven ability to detoxify synthetic chemical residues. Trials at Tocklai, showed residue reductions of 28 - 83% for pesticides like Thiamethoxam, Fenpyroximate, Thiachloprid, and Quinolphos, driven by the amino acids in Biokad. This field evidence is reinforced by academic validation from Cranfield University, UK, whose research - cited in Springer's *Biochemical Mechanisms of Detoxification in Higher Plants* - confirms Biokad's efficacy through three pathways: activation of defence enzymes to neutralise harmful radicals generated due to chemicals or environmental stress, enhanced xenobiotic metabolism for residue breakdown, and membrane stabilisation to limit toxin entry. This multifaceted detoxification response not only reduces the MRL profile but also ensures that the tea bushes remain physiologically robust even after chemical stress, making Biokad an ideal fit for sustainable tea production systems.

A climate-resilient input for progressive tea farming

In the changing climatic landscape of Assam and West Bengal, tea plants are subjected to a complex combination of abiotic stressors - with prolonged drought now emerging as one of the most severe threats to productivity and bush longevity. Biokad's amino acids play a vital role as osmoprotectants - organic molecules that safeguard plant cells from osmotic stress due to drought, excess rainfall, salinity, or temperature fluctuations. Osmotic stress impairs cell turgor and membrane integrity, ultimately disrupting cell function. Amino acids such as proline and glycine, present in Biokad, stabilise proteins and membranes, helping the plant maintain its metabolic balance. Additionally, these amino acids act as signalling molecules, triggering systemic responses to pest attacks and nutrient imbalances. This dual role not only fortifies the

plants against stress but also leads to more consistent growth and improved productivity. Similarly, high diurnal variation (day - night temperature differences) imposes significant stress on tea plants. Elevated daytime temperatures can denature essential enzymes, while the sharp drop in temperature at night inhibits cellular metabolism, often resulting in tissue damage, brittle growth, and poor recovery. The amino acids in Biokad help mitigate these effects by protecting cellular proteins through heat-shock modulation, maintaining membrane fluidity, and regulating gene expression to support plant adaptation.

Biokad is especially relevant under:

Drought and heat stress

Heavy rainfall and waterlogging

Chemical pesticide applications

Nutrient-poor soils

Trials indicated that plants treated with Biokad under stressful environmental conditions maintained superior growth and yield consistency compared to untreated controls or conventionally treated bushes.

Economics of Biokad: High returns on every rupee spent

Beyond its biological benefits, Biokad delivers strong economic returns for tea growers in Assam and West Bengal. TRA's cost-benefit analyses from trials at Tocklai (Jorhat) and Nagrakata (Dooars) reported ratios of 2.45 in Assam and 2.88 in West Bengal - well above the profitability benchmark of 1.0. This demonstrates that Biokad not only enhances yields but also generates higher net incomes, making it a profitable and sustainable investment for tea plantations.

Conclusion

In light of extensive multi-location trials and biochemical analyses conducted by TRA, Biokad emerges as a scientifically validated, eco-compatible input that can enhance both yield and quality of tea, while significantly contributing to chemical residue management. As tea plantations gear towards cleaner, greener, sustainable intensification, Biokad offers a smart, biotechnology-backed solution aligned with the future of progressive tea farming in India.

KEY REFERENCES

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