Toll-Free: +1.888.BKB.7278
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BKB
BROOKLYN BEVERAGES, INC.

109 Gold Street, Suite PHB
Brooklyn, NY 11201

INFRASTRUCTURE SPOTLIGHT
Semni Valley Tea Estate Factory

The Semni Valley Tea Estate factory has 4 CTC lines, two of which are shown here.

Company Introduction

Haileyburia Tea Estates Ltd. (HTEL)

Incorporated in 1923, Haileyburia Tea Estates Ltd. (HTEL) operates three estates—Haileyburia, Semni Valley, and Chinnar—spread over 3,000 acres in Elappara, Kerala, India. It employs over 1,000 people to produce 1.8 million kilograms of crush-tear-curl (CTC) black tea annually. In addition, HTEL grows coffee and spices, mainly black pepper and cardamom. The company is headquartered in Kochi, the commercial capital of Kerala.

Other than the Semni Valley Tea Estate (SVTE) factory, the focus of this spotlight, a second factory is operated at the Haileyburia Tea Estate, specializing in Orthodox and Green Tea manufacturing.

Brooklyn Beverages, Inc. (BKB)

Brooklyn Beverages, Inc. (BKB) is the independent export division of HTEL. A Delaware incorporated holding located in New York, BKB exclusively makes export markets for HTEL's produce. It also leverages its position in the Cochin Tea Auction to further address needs with award winning procurement solutions.

Production Overview

Manufacturing for *Chinnar*, our flagship trademark, and export orders occurs within SVTE premises in its state-of-the-art factory constructed in 2002. The factory specializes in dust and fanning grades including primary and secondary PD, RD, PF1, BOPF, GD, SRD, and SFD, as well as BP, BOP, and BP1.

INDIA TEA
World's Gold Standard

Year Built	2002
Location	Elappara, Kerala, India
Elevation	3,600 feet
Size	35,000 sq feet
Crop Intake	3,600 kgs of green leaf per hour
Production Lines	4x CTC
Annual Output	1.8 million kgs of made tea
Factory Staff	75
QC Staff	15
Trade Marks	Chinnar, Haileyburia, Periyar, Brooklyn
Additional Services	OEM Manufacturing, Private Label

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The factory, seen here on the far right in white, is flanked by the picturesque Semni Valley to its east.

Why Chinnar?

The taste of *Chinnar* simply cannot be replicated. Generations of tea drinkers in South India have enjoyed its unique taste, which is fostered in the SVTE Factory.

- At an elevation of 3,600 feet, the factory is flanked by Semni Valley to its east and the world-renowned Vagamon meadows in the background, allowing abundant natural airflow for ample oxidation, a must for good flavor. Proper ventilation is enabled by a state-of-the-art fabricated steel structure built by Kirby Building Systems, a worldwide leader in pre-engineered systems.
- Water from a natural spring source, harvested with a dedicated reservoir in Field No. 1 within the estate, is used in the factory. It is a practice unheard of in most factories today, further adding to the legend of *Chinnar*.
- With a layout that enables an automated flow process, the manufacturing is completely hands-free once the green leaf has been fed for processing.

THE GOLDEN LEAF INDIA AWARDS
Southern Tea Competition

In 2010, Chinnar *won the Golden Leaf Award in the CTC-Dust category.*

- Teas are vacuum packed after going through various quality controls; for example, moisture content is constantly monitored by measuring the drier mouth bulk every hour. In addition, the factory employs experienced tea tasters who regularly meet in the iconic tasting room, where many a debate has occured.

The SVTE tea factory was the last legacy of the late Bachhraj Dugar, a wizard planter, who passed away in August 2007.

The factory employs experienced tea tasters who ensure consistent taste and quality.

Manufactured tea is bagged in jute sacks before heading to the weekly Cochin Tea Auction.

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Regulatory Compliance

Under the stringent supervision of the honorable Department of Factories and Boilers, Government of Kerala, the SVTE factory conforms to all state and federal Acts and Rules, notably:

Acts

1. The Factories Act, 1948
2. The Indian Boilers Act, 1923
3. The Environment Protection Act, 1986
4. The Payment of Wages Act, 1936
5. The Maternity Benefit Act, 1961
6. The Dangerous Machine (Regulation) Act, 1983
7. The Labour Laws (Exemption From Furnishing Returns and Maintaining Registers by Certain Establishments) Act, 1988
8. Prevention of Food Adulteration Act, 1954

Rules

1. The Kerala Factories Rules, 1957
2. The Kerala Factories (Welfare Officers) Rules, 1957
3. The Kerala Factories (Major Accident Hazard Control) Rules, 2003
4. The Kerala Boiler Rules, 1967
5. The Kerala Boiler Attendant Rules, 1957
6. The Kerala Boiler Operation Engineers Rules, 1957
7. The Kerala Economiser Rules, 1957
8. The Kerala Dangerous Machines (Regulation) Rules, 1990
9. The Payment of Wages (Procedure) Rules, 1937
10. The Kerala Maternity Benefit Rules, 1958
11. The Environment (Protection) Rules, 1986
12. The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
13. The Chemical Accidents (Emergency Planning Preparedness and Response) Rules, 1996

Additional Audits

1. Kerala State Pollution Control Board
2. Food Safety and Standards Authority of India
3. Phytosanitary: Directorate of Plant Protection, Quarantine & Storage
4. Pesticide Maximum Residue Limits (MRL) & Liqour Analysis: United Planters Association of South India (UPASI)

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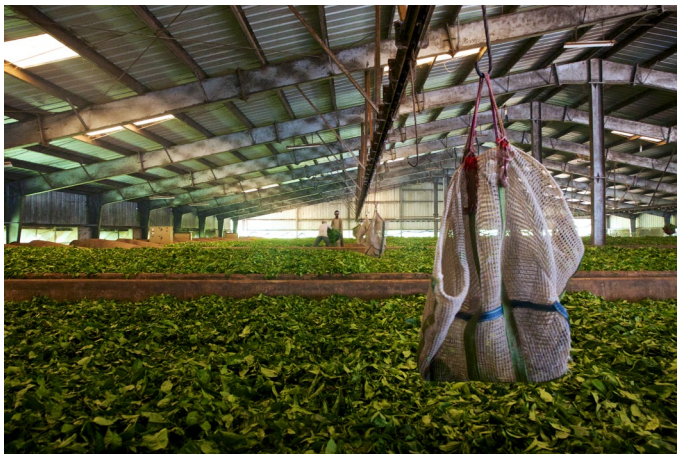
Principal Equipment

Withering Troughs



Number	10
Dimensions	100 ft length x 18 ft width each
Storage Capacity	4,000 – 5,000 kgs per trough
Fan Make	Kirloskar
Impeller Diameter	48 inches
Motor Power	5 horsepower
Fan RPM	960
Airflow Rate	29,500 cubic ft/min
Discharge Velocity	2,349 ft/min
Static Pressure	0.50 inches
Total Pressure	0.83 inches

CTC Machines

Make	Vikram	T & I Global
Model	Jumbo Plus	Sennova
Number	3	1
Segment Roller Width	13 inches diameter x 36 inches length	13 inches diameter x 30 inches length
Roller Speed (HS)	440 RPM	440 RPM
Roller Speed (SS)	45.5 RPM	45.5 RPM
Capacity	1,000 kgs/hr	800 kgs/hr

Fermenting Drums

Make	Kirloskar	GEC Duplex
Number	5	1
Rotation Speed	1 RPM	1 RPM
Storage Capacity	1,000 kgs of dust	1,500 kgs of dust

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Principal Equipment (continued)

Heaters

Make	Parucco	Parucco
Model	18 Series (5 Pass)	16 Series (5 Pass)
Number	2	1
Output (Hot Air @ 140° C)	42000 kgs/hr	33000 kgs per/hr
Heat Output	1,300,000 – 1,450,000 kcal/hr	900,000 – 1,050,000 kcal/hr
Fuel Burning Capacity (Firewood)	1.2 m3/kg	8.0 m3/kg

Dryers

Make	Kilburn	Kilburn
Model	VFBD SENIOR-FF	VFBD STANDARD –EEIII
Number	1	2
Water Evaporation	700 kgs/hour	1,050 kgs/hour
Heat Requirement (Hot Air @ 140° C)	23,000 kgs/hr	34,000 kgs/hr
Fuel Consumption per/kg Wood	400 – 700 kgs M.T/cub.mtr	400 – 700 kgs M.T/cub.mtr
Output	400 – 600 kg/hr	250 – 350 kg/hr

Power Supply

Generator Make	Jyoti	KEL	Stanford
Type	180 KVA	250 KVA	250 KVA
Number	1	1	1
Amperage	348	348	250

Transformer Make	INTRANS
Type	750 KVA OLTC (On Load Tap Changer)
Voltage	415
Amperage	1,000
Load	1,146 horsepower

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Ancillary Equipment – Key Highlights

Moisture Analyzer

Since moisture content has a decisive impact on price, processability and quality of tea, we exhaustively take measurements at the following control points, conforming to global regulators such as the U.S. Food and Drug Administration (FDA) and European Council:

1. Fermented *Dhool* – every hour
2. Drier Mouth Bulk – every hour
3. Graded Tea – before packing

Make & Model	Sartorius
Model	MA150 (FDA)
Capacity	150 grams
Readability	1 mg (0.01%)
Reproducibility	>5g/0.02%
Results	%Moisture, %Dry, %Ratio, g residue
Calibration	100 g ATSM Class 1
Special Feature	Glass-Free

Vacuum Packing Machine

Our newest addition to facilitate the needs of importers to store tea in as fresh a condition as possible is in-house vacuum packaging. This allows tea to be preserved for much longer than 18 months, which is normally seen as bulk tea's perishable lifespan.

Make & Model	SEPACK 900 VV – 150
Sealing	900 mm X 10 mm
Vacuum Pump	150 meters per hour
Pump Power	5 horsepower
Cycle Time	30 – 35 sec
Capacity	300 – 400 kgs
Packing Speed	1 carton box per min (35 – 41 kgs)
Special Features	Pouch Insertion
	Automatic Gravimetric Filling
	Vertical Vaccum and Sealing
	Semi Automatic Strapping

Maintenance

In addition, the factory maintains an integrated workshop within premises giving it the necessary infrastructure to keep the factory running 24/7, 365 days of the year, if needed. Highlights include:

1. Milling Machine by T & I Global Ltd.
2. Special Purpose CTC Chaser Grinder by SIGMA Engineering
3. Aquatak 1250 125bar 1800W High Pressure Washers by Bosch GmbH

A foundry with dedicated worksmiths is part of the workshop.