

Dark tea in China: a type of post-fermentation tea only made in China

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ABSTRACT: This paper gives an overview of the development history of Chinese dark tea, its types, production, processing and marketing. Particularly, it deals with the classifications, quality and processing characteristics in its habitats such as Human province, Hubei province, Sichuan province, Yunnan and Guangxi province to bring a more profound understanding of Chinese dark tea.

Keywords: Moisture heaping; Fu Zhuan dark tea; Qingzhuan dark tea; Kangzhuan dark tea; Liubao dark tea; Pu'er tea

Introduction

The history of production of the Chinese dark tea is centuries-old. During Xi-ning of Song Dynasty (about 1074 AD), the methods of changing the colour of the green tea into dark were recorded in Sichuan province but the two letters of "dark tea" first appeared in a memo to the throne written by a censor named Chen Jiang in the Ming Dynasty (1524 AD). According to this, the production of "dark tea" in China started at least 480 years ago.

Presently, Dark tea is mainly produced in Sichuan, Hunan, Hubei, Yunnan and Guangxi provinces. The main products are: Fu Zhuan tea, Huazhuan tea, Heizhuan tea, Xiang jian tea, Kang zhuan tea, Jin jian tea, Fangbao, Green brick tea, Liupu tea, Pu'er bulk tea, Pu'er Tuo tea, Pu'er cake tea, Pu'er brick tea and so on. The output of dark tea per year is nearly 100,000 tons, which is mainly distributed in the border areas of China such as Xinjiang, Tibet, Qinghai, Gansu and Inner Mongolia. The area of domestic consumption primarily includes the provinces such as Shandong, Shanxi, Hebei, Henan, Guangdong, Hongkong, Macao, Taiwan, and the main tea-producing regions. The importing countries are Russia, Mongolia, Japan, France, and Southeast Asian countries.

The semi-finished dark tea is made by plucking shoots with one bud and four or five leaves, which pass through the processes of de-enzyming, twisting, moisture heaping and heat energy dehydration. Then it is re-processed by a large-scale brick tea factory to make it into bowl, cake shaped tea and brick tea of different standards; or to be a bamboo-basket-packaging tea like Liupu tea, Tianjian tea, Gong jian tea, Sheng jian tea,

Pu'er bulk tea. The re-processing technology includes sifting, mixing and stacking, moisture heaping after steaming, brick tea processing or putting tea into bamboo basket and pressing, cooling dehydration, heat energy dehydration. Generally, the compressed dark tea has an after-ripening period, so it is tasted after being reserved for three to five years. The flavour of this is stale and mellow, the liquor colour being orange yellow to bright red, but with no bitter and astringent taste.

In China, the health-protecting functions of tea, such as remedy for diarrhea, lipid and corpulence depressing of Pu'er tea, Hua Juan tea, Fu Zhuan tea and Liupu tea were recognized long before. In later years, systemic studies with rat and rabbit experiments, further proved the functions of dark tea for treating corpulence, reducing the content of total cholesterol and low-density lipoprotein and improving the blood quality. So the dark tea has been considered as a suitable beverage for people with poor health.

Hunan Dark Tea

Hunan dark tea originated in a place called Baozhiyuan of Anhua county in Hunan province. Its production and trade flourished during Guang-xu epoch of the Qing Dynasty. At that time the output of dark tea per year was 7,000 or 8,000 tons, which greatly contributed to temporal "exchange of horses with tea". At present, the output of semi-finished dark tea per year is nearly 25,000 tons. This semi-finished dark tea is made through the processes of de-enzyming, twisting, moisture heaping and dehydration, in which the process of moisture heaping is the key for forming its unique quality, which is different from that of Sichuan tea which is made from modified green tea.

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The semi-finished dark tea is differentiated into four grades. The internal quality of all grades is required to have orange yellow and bright liquor, and with no suspension. The flavour is stale and characterization and characterics, but harshly green and astringent in taste. Presently, the first and the second grade semi-finished dark teas are also used to process top grade Fu Zhuan tea and Heizhuan tea.

The bamboo-basket-packed tea products of Hunan dark tea are Tianjian tea, Gong jian tea and Sheng jian tea; Compressed tea products are Fu Zhuan tea, Heizhuan tea, Huazhuan tea and Hua Juan tea (Qianliang tea), etc. The common compressing procedures of semi-finished dark tea include mixing, sifting, moisture heaping, weighing, steaming and compressing tea into brick, cooling (fungus growing for Fu Zhuan tea processing), dehydrating, packing and so on.

Tianjian Tea, Gong jian Tea and Shengjian Tea

The above-mentioned three bamboo-basket-packed tea products are generally called "Xiang jian tea" which are top grades among Hunan dark tea. During Dao-guang epoch of the Qing Dynasty, Tianjian tea and Gong jian tea was supplied to the Royalty as a tribute. Tianjian tea is manufactured from the first-grade raw dark tea, whereas Gong jian tea and Sheng jian tea are processed from the second and the third-grade raw dark tea. In the past, the net weight per bamboo basket of Tianjian tea, Gong jian tea and Sheng jian tea was 50 kg, 45 kg and 40 kg, respectively, which has changed to 2 kg nowadays. The quality of Tianjian tea is characterized by its black bloomed appearance, mellow and thick flavour, orange yellow bright liquor and yellowish auburn infused leaf; Gong jian tea is characterized by its black and slightly auburn appearance, pure and mellow flavor; and Sheng jian tea is characterized by its blackish auburn appearance, neutral and thin flavour, dull auburn liquor and infused leaf.

At present, processing factories of Xiang jian tea include Baishaxi tea factory of Anhua County and other minor tea factories in Hunan province. It is mainly dispersed in Shanxi province and is especially popular in Guanzhong area. It is also consumed in northwest and northern areas of China.

Fu Zhuan Tea

Fu Zhuan tea first appeared during Tong-zhi epoch of the Qing Dynasty (around 1860). At that time raw dark tea produced by Anhuacounty was trampled and compressed

into big bamboo baskets which weighed 90 kg, and transported to Jingyang county of Shanxi province for compressing to form Fu Zhuan tea, so it was called "Hu tea" because the processing season was hot summer. It was also called "Fu tea" and "Jingyangzhuan tea". The processing of Jingyangzhuan tea has been stopped since 1958. Now Fu Zhuan tea is produced by several factories, such as Yiyang tea factory and Linxiang tea factory in Hunan province. The products have two standards such as "Specialty Fu zhuan tea" and "Common Fu zhuan tea", the former is re-processed from the third-grade raw dark tea; and the materials for the latter is made up of 40–45% of the third grade raw dark tea, 5–10% the fourth grade raw dark tea and 50% other mixed tea. The production of Fu Zhuan tea per year is 20,000 tons.

The process of manufacturing Fu Zhuan tea comprises mixing of materials, sifting, steaming and moisture heaping, compressing into brick, mould spot appearing, dehydrating, and packaging. The fungi, causing the mould spot on the brick, was identified as the species of *Eurotium cristatum* (Raper & Feunell) Mallach & Cain, which bring a particular aroma called "aroid flavour". Because the sporangium of this fungus is golden and fresh, its popular name is 'golden flower'. According to a long-term research study conducted by Hunan Agricultural University, this fungus plays an important role in forming the quality of Fu Zhuan tea and improving its flavour. Investigations show that Fu Zhuan tea has the ability in improving blood quality of tested Wister rat and rabbit, and reducing the content of TG, TC and LDL in their serum.

Fu Zhuan is a kind of cuboids brick tea, its standard length×width×height is 35 cm × 18.5 cm × 4.5 cm and surface is flat and smooth. These two sorts of bricks are both characterized of the special aroid flavour and with inner golden flowers after striking the bricks. Fu Zhuan tea is mainly distributed to Xinjiang, Qinghai, Tibet, Gansu, Ningxia, and is exported to Russia and Japan.

Heizhuan Tea

Heizhuan tea has been in production in a place called Baishaxi located in Anhua county, Hunan province, since 1940. In the beginning, it was called "Eight words brick" because the surface of Heizhuan tea had eight Chinese words. At present, the output of Heizhuan tea per year is 5,000 tons, which is mainly distributed in Xinjiang, Qinghai, Gansu, Ningxia, and is exported to Russia and Mongolia.

The raw material of Heizhuan tea is similar to that of Common Fu Zhuan tea, and is mixed with the third-

grade and the fourth-grade raw dark tea. Heizhuan tea is manufactured through the processes of sifting, steaming and moisture heaping, compressing into brick, dehydrating, packaging, etc. Heizhuan tea is also a kind of cuboids brick tea, its standard length×width×height is 35 cm×18 cm×3.3 cm, weighing 2 kg per brick. Its surface is normal and has four clear corners, vivid mold veins, appears blackish auburn, smells pure, has strong taste and is slightly astringent. Its liquor is red yellow, the infused leaf is dull brown in colour.

Hua Juan Tea and Huazhuan Tea

Hua Juan tea is also called “Qian Liang tea” which is compressed in 1,000 liang (according to former scale, 16 liang is equal to 500 g) of Raw dark tea. Because it is bulky cylinder with 147 cm length, 20 cm diameter and weighs 31.25 kg per roll, the tea body is tight and heavy, the package is primitive, simple but attractive. It is titled as “the King of world tea”. Historically, the production of Hua Juan tea per-year was about 30,000 rolls during its prime period and was distributed in Shanxi, Ningxia and Shanxi province.

The earliest Hua Juan tea showed an elaborate workmanship, excellent quality and grand packaging, which included three layers. The outer layer was bound up with harsh bamboo strips, and the middle layer was bound up with hunk palm leaf and the inner liner was of Polygonum leaf. This type of packaging is beneficial not only to maintain flavour but also prevents moisture. The tea body was solid like trunk, appeared black bloomed, smelled stale and distinctive mild bamboo flavor. The liquor was orange red bright in colour, taste mellow and thick as well as sweet and mild. Hua Juan tea has characteristic refreshing quality, lowers lipid, aids in digestion and has anti-dysentery properties. However, the tea body is so compact and solid that it is difficult to break it for infusing. Its manufacturing method was also complicated. It was changed in 1958 to be compressed into a brick tea and was called “Huazhuan tea”.

Huazhuan tea is compressed mostly from the third-grade raw dark tea, its standard weight is the same as Heizhuan tea. The surface of Huazhuan tea is flat and smooth, has four clear corners, vivid flower pattern, appears blackish auburn, smells pure, tastes mellow and thick with slight astringency. The liquor is red yellow in colour and the infused leaf is even.

The output of Huazhuan tea per year is 20,000 to 30,000 tons. It is centrally sold in Taiyuan city, and is distributed in the northeast of Shanxi province and Inner Mongolia autonomous region.

Sichuan Dark Teas

During the Tang and the Song Dynasty “the exchange of horses with tea” prevailed in the northwest area of China (Xinjiang, Qinghai). The tea used for exchange was mostly produced in Sichuan and south Shanxi. At that time, inconvenient transport and lack of packaging tea, to protect from rain and moisture conditions, led the tea bags to be transported by ships or carried by vehicles or horses for long periods of time extending to several months, before it arrived at the consumption areas. As a result, the original green tea has already turned its colour due to post-fermentation chemical changing into another kind of tea with mellow and astringent taste, nowadays called “dark tea”. During the Ming dynasty, to meet the demands of the area, the native tea peasants steamed and moisture-heaped the green tea to make the “dark tea”.

Kang Zhuan Tea and Jin Jian Tea

Kang Zhuan tea and Jin Jian tea are two kinds of Sichuan dark tea that is mostly produced in Ya’an and Leshan district of south Chendu and compressed concentrated in Ya’an and Yibin district.

Kang Zhuan tea and Jin Jian tea are both steaming and pressing tea. These two kinds of tea have round-cornered pillow appearance, the standard length×width×height of Kang Zhuan tea is 16 cm×9 cm×6 cm and its net weight is 0.5 kg per brick, the standard length×width×height of Jin Jian tea is 22 cm×18 cm×11 cm and its net weight is 2.5 kg per brick.

Kang Zhuan tea is characterized by its brownish auburn, pure smell, mellow taste with a strong red liquor and a rather coarse and mixed infused leaf. Jin Jian tea is characterized by its brownish auburn, has neutral flavour, bright red liquor and coarse and dull brown infused leaf.

Kang Zhuan tea is mainly sold to Tibet and west Sichuan surrounding Lhasa and Kangding districts. Jin Jian tea is mainly sold to the remote area of Tibet surrounding Kangding district.

Fangbao Tea and Fu Zhuan Tea

Fangbao is a primary type of Sichuan dark tea, produced in Dujiangyan and Pingwu district located in the west of Chengdu. The leaf used to make raw dark tea is coarse and its re-processing includes the processes of blending, roasting and compressing tea into bricks. The processes of heating heap, and cooling heap are also rather extensively used.

The fresh leaves are dried by heat energy or by sunshine, and carry out fixation to make raw dark tea,

which is then sieved, cut, steamed and piled for one or two days. Then according to the standard prescribed for tea, it passes through weighing, roasting, compressing tea into bricks and heating heap. It is a tightly clinker-shaped tea package, nearly 3 cm high and is kept for three to five days; then it passes through cooling heap of about 4 cm height for twenty to thirty days to dehydrate tea until the moisture content is 16–20%.

Fangbao tea is packed with thin bamboo strips and shows a ruff quartriangle rather than having sharp corners. It is yellowish auburn, has slightly scorched smell, pure and neutral taste, reddish yellow liquor, yellowish auburn and coarse infused leaf. Its net weight is 35 g per brick. It is a kind of cuboids brick tea whose standard length×width×height is 66 cm×50 cm×32 cm. It is sold in Songpan district and in Gansu, Qinghai, and Tibet.

The manufacture of Sichuan Fu Zhuan tea is through a complicated process which includes fixation, first moisture heaping exposing to sun shine, sieving, steaming, twisting, second moisture heaping, sunshine dehydration, then re-processing raw dark tea through sifting, steaming and compressing tea into bricks, mould spot appearing, and then finally drying to Fu Zhuan tea.

Fu Zhuan tea is yellowish brown in colour, with corrugated surface, measurable tightness, obvious golden looks flowery, pure smell, typical and neutral taste and bright red liquor, the infused leaf is brownish auburn.

Yunnan Dark Tea

Yunnan dark tea is divided into two kinds: Pu'er bulk tea and Pu'er compressed tea.

Pu'er tea originated from Xishuangbanna and Simao area (now named Pu'er city) of Yunnan province. Presently, it has spread to 28 counties such as Lincang, Dali, Kunming, etc. The manufacture of Pu'er compressed tea is concentrated in Menghai, Dali, Fengqing, Kunming districts and its production is around 50,000 tons per year. The highest consumption region is Guangdong, Guangxi province, Hongkong, Macao, and Taiwan. It is exported to Singapore, Malaysia, Burma, Thailand, France, UK, Democratic People's Republic of Korea and Japan.

Pu'er bulk tea

Pu'er bulk tea is made by post-fermentation of solar-dried green tea and processed with fresh leaves of Yunnan large-leaf tea plant. It appears brownish red in colour with bright and strong red liquor, stale and strong smell, mellow and thick taste, and has brownish red infused leaf.

Pu'er Compressed tea

Pu'er compressed tea is divided into the following four kinds: Yuan tea, Tuo tea, Jin tea and brick tea.

Pu'er Yuan tea

Pu'er Yuan tea is a kind of orbicular cake-shaped compressed tea, it is also called "Qizibing tea" because one piece of canister is comprised of seven bundled cakes, which weigh 375 g each, 20 cm diameter, the central thickness is 2–5 cm, fringe thickness is 1.2 cm. It is compressed from the dark tea material. The manufacturing method involves sieving, blending, moisture heaping, compressing and packing.

Yuan tea has a uniform round and even surface, tippy, reddish auburn and bloomed appearance, with obvious stale smell, mellow and smooth taste, bright and strong red liquor, brownish red, bright and soft infused leaf.

The domestic market of Pu'er Yuan tea products is Beijing, Shanghai, Guangdong, Hongkong, Macao, Taiwan, Yunnan, Sichuan and Tibet, and it is exported to Vietnam, Laos, Malaysia, Burma and Thailand.

Pu'er Tuo tea

Yunan Tuo tea is being manufactured in Xiaguan tea factory since 1976. Tuo tea is bowl or mortar shaped with 8.3 cm marginal diameter, 4.3 cm height, weighs 100 g per piece, is reddish auburn and bloomed appearance, slightly tippy, smells stale, has mellow taste, is thick and smooth, with bright and strong red liquor, brownish red, bright and soft infused leaf.

For convenience of infusing of Tuo tea, smaller packets are being prepared, which weigh 4 g per piece; one infusing just uses one piece. It is reddish auburn and rather bloomed, smells stale and strong, with pure and mild taste, and strong red and bright liquor, brownish red and rather bright and soft infused leaf.

The domestic markets of Yunan Tuo tea is mainly in the southern part of China, and it is mainly exported to Western Europe.

Pu'er Jin tea

Pu'er Jin tea is heart shaped, and is also called as heart Tuo tea or Banchan Tuo tea. It is also manufactured by Xiaguan tea factory. It appears tight and normal, reddish auburn, orange red liquor, stale fragrance, has mellow and thick taste.

Pu'er brick tea

Pu'er brick tea is mainly produced by tea factories in Yunnan province. The products weigh 250 g, 500 g, 1000 g, 2000 g and 3000 g. The brick (cuboid) weighs 250 g and has two standard length×width×height of 14 cm×9 cm×3 cm and 15 cm×10 cm×2.5 cm. It is reddish brown and rather bloomed and tippy appearance, with obvious aging aroma, mellow taste, bright red liquor, reddish brown and rather bright infused leaf. It is mainly sold in Hongkong, Macao, Taiwan and Southeast Asia.

Hubei Green brick tea

Hubei Green brick tea was being produced more than 140 years ago during the Qing Dynasty (around 1854–1861 AD). It originated from a place called Yangloudong of Puqi county in Hubei province, in the middle period of the 19th century. Hubei Green brick tea is packed in bamboo baskets and then transported to northern China. The production is around 8,000 tons per year. The major markets are Inner Mongolia, Qinghai, Gansu and Xinjiang province and it is also exported to Russia and Mongolia. The Green brick tea is tight, flat and normal, greenish auburn, has smooth corners and surface, with clear lines, strong smell, pure and mild taste, orange red liquor, dull brown and coarse infused leaf.

Guangxi Liupu tea

The name of Guangxi Liupu tea is drawn from the fact that this tea originated from Liubao village in

Cangwu county of Guangxi province. The production is around 2,000 tons per year. The main domestic markets of Liupu tea are Guangdong and Guangxi provinces; about 800 tons of it are exported to Hongkong, Macao district and Southeast Asia every year.

Liupu tea has excellent quality and peculiar flavor. It is tight and evenly twisted, is blackish auburn and bloomed, with stale and strong smell, strong red and bright liquor. It has mellow, thick, sweet and brisk taste, with areca flavour, reddish brown infused leaf. It is famous for its quality character of “red, strong, stale, mellow” and the merit of lasting infusing and long storage time. It is reported that the Liupu tea has medicinal effects on heat stroke, clears sight and head and aids in digestion, then soothened the stomach and helps in health protection. Drinking Liupu tea stored for more than five years and blended with suitable winter honey manifest anti-dysentery activity.

Manufacture of Liupu tea includes primary processing and the refining process. The primary processing comprises fixation, first twisting, pile-fermentation, second twisting and drying, while the refining process includes sieving, blending, first steaming, moisture heaping, second steaming, putting tea into bamboo basket and pressing and staling. Among these, the “moisture heaping” and “staling” are the two most important processes for manufacturing high quality Liupu tea.

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1. Tea plantation in Yaan, Sichuan province



2. Kang-Brick tea



3. Raw material for brick-tea-processing in Sichuan province



4. Pressing of Kang-brick tea



5. Tibet tea product



6. Qian-Liang tea in the ancient Tea-Horse Path



7. Gong Jian tea



8. Hei-brick and Hua-brick tea



9. Qian Liang tea



10. Tian Jian tea



11. Yi-Yang tea factory



12. Fu-brick tea products from Yi-Yang, Hunan province



13. Dark tea products from Yi-Yang, Hunan province