

Research and Prospect of Chinese Bristle Production and Export Since Modern Times

Jiamin Wan

Biquan Academy College of philosophy, history and culture, Xiangtan University, Xiangtan
411100, China

1176494431@qq.com

Abstract

China's bristles have high output and good quality. From the early years of the Republic of China to the reform and opening up, China's bristles have always occupied a leading position in the world bristle trade. How about the production and export of bristles in modern China, why China can dominate the world, and what political measures the national government has taken in the production and marketing of bristles, this paper will discuss from the aspects of geographical environment, international situation and modern China's national conditions.

Keywords

Bristle; Production; Export.

1. Introduction

Bristles mainly refer to the bristles on the neck and back of pigs. In ancient times, they were called "rigid bristle". Because of their acid, alkali and heat resistance, they have become high-quality raw materials for making all kinds of brushes. Chinese bristles did not attract people's attention more than 100 years ago, and they had no status and value in commerce. At that time, except for a few used to make clothes brushes, they were mostly treated as waste as fertilizer. Modern Chinese farmers suffered from the double exploitation and oppression of the feudal class and imperialism, and they could not eat enough. Their pigs could only eat wild fruits and sleep in thatched huts, which was almost the same as wild pigs. This made the bristles of pigs rich and hard. They were the best raw materials for making bristles in various countries. After the five-port trade, outsiders found that the quality of Chinese bristles was excellent and could make huge profits in China's blank bristle market, so they constantly sent people to China to buy bristles and set up factories to process bristles, which attracted the attention of the Chinese people.[1]

2. Production of Bristles in Modern China

"The main distribution area of bristles in the world is China." [2] In 1947, the supply of bristles in the world was about 6000 tons a year, and China accounted for more than 75%. [2] According to a survey conducted by the Ministry of agriculture and forestry of the Republic of China in 1947, it is estimated that there are more than 70 million pigs in China, which can produce 100000 loads of bristles, of which more than 90% are black bristles, and the rest are white bristles, yellow bristles and flower bristles. Because raising pigs is the main sideline of Chinese farmers, China's bristles are produced all over the country. The output of bristles is obviously affected by seasons, so the output of bristles in various provinces is very different. The main reason is that the mane of pigs is used to keep out the cold. The output is the most in winter and the quality is the best, followed by spring and autumn and the worst in summer. Therefore, the

bristles produced in Fujian, Guangdong, Guangxi and Yunnan provinces close to the tropics are short and soft, with small commercial value, so they are not noticed.

The pig industry in Sichuan Province is extremely prosperous. It is the largest producing area in China. There are black and white. The white mane accounts for about one-third and the black mane accounts for about two-thirds. The quality is excellent. Sichuan farmers, regardless of high or low, rich or poor, mountains and valleys, fertile soil and barren land, almost have pigs where there are people, so there is the Shu proverb "black haired pigs, every family has". In addition to Sichuan's superior geographical environment, rich green plants and low pig raising cost compared with other regions, economic motivation and land demand for fertilizer are also major factors in the development of pig raising industry in Sichuan. Since the late Qing Dynasty, the number of pigs in Sichuan has remained roughly 10 ~ 15 million. If each pig produces 22 taels of bristles, the annual output of bristles in the province is between 12500 ~ 18750 taels, accounting for about 14% of the country.[3] During the period of the Republic of China, Sichuan animal products company founded by Gu gengyu once monopolized the export of a large part of bristles in the country. It is known as the "bristle king". In terms of its monopoly degree in an industry, it ranks first in the country. [4]

Hunan is surrounded by mountains in the east, west and south, with a basin in the middle. Its special geographical location leads to more rain and dense vegetation all year round. It is rich in pig feed. In modern times, there were a large number of farmers in Hunan. Every family raised pigs. The output of bristle was second only to Sichuan, accounting for about 10% of the country. Hunan bristle industry is the most developed in Xiangtan. In the sixth year of the Republic of China, Mitsui foreign firm, a Japanese merchant based in Hankou, sent comprador Gao Jintang to Xiangtan. In order to compete for white bristles, it used the workshop to resume production by paying several percent of the payment in advance, and the products were changed to Dongyang village. According to the statistics of the 24th year of the Republic of China, the output of 13 main materials in Xiangtan County totaled 5.225 million yuan, including 600000 yuan of bristles, accounting for 11.4% of the total output, followed by 1 million yuan of millet and 800000 yuan of pigs. In the 26th year of the Republic of China, the war of resistance against Japan broke out and Japanese businessmen withdrew. European and American countries feared that Japan would blockade Haikou, China, and competed with each other to buy. As a result, Xiangtan bristle market was extremely prosperous. There were more than 80 workshops and more than 3000 practitioners, with an annual output of more than 250 tons of bristles. It jumped to become the five largest bristle markets in China with Shanghai, Tianjin, Hankou and Chongqing, and the output of white bristles ranked first in the country. [5]

In addition to Sichuan and Hunan, the main producing areas of bristles are Jiangsu, Jiangxi and other provinces. The output of the nine northeastern provinces is also considerable, and its total amount is higher than that of Sichuan. During the Anti Japanese War, the output of bristles in Sichuan was almost the same as that before the war. The output of Hunan, Yunnan and other provinces increased, while the output of Guangdong, Hubei, Anhui, Zhejiang and Jiangxi provinces decreased sharply due to the impact of the war. The specific data are shown in table 1:

China's bristle production is estimated according to the number of pigs, but not all Chinese bristles have been fully utilized commercially. In some remote areas, due to the restrictions of production, sales and transportation, the bristles produced by farmers are only used for their own use or as fertilizer, and there are not a few bristles that are not processed and sold.

Table 1. Estimation of bristle production in China (Unit: public bear)

Production area	Pre war average (1933-1937)	Wartime average (1938-1946)	Post war estimated average (1947-1951)
Sichuan	9000	9200	13000
Hunan	6000	7700	9000
Jiangsu	5000		6000
Jiangxi	4000	3000	5000
Guangdong	3800	1000	4000
Shandong	3500		5000
Hebei	3000		5000
Henan	3000	3000	5000
Guangxi	2800	2950	2000
Hubei	2700	800	4000
Total of nine provinces in Northeast China	10000		15000
Yunnan	2400	2800	3000
Anhui	2000	1250	3000
Zhejiang	2000	500	3000
Fujian	2900	1000	2000
Guizhou	1500	1600	2000
Shaanxi	1200	1540	2000
Gansu	760	1100	2000
Shanxi	500		2000
Sum of other provinces	450	1200	8000
Total	65100		100000

(Reference: According to the figures published by the Central Agricultural Experimental Institute of the Republic of China, see the article "China's bristle producing areas and output" in Zhengyan newspaper on November 11, 1946, in bristle production and marketing, edited by the information bureau of the Executive Yuan, 1947 edition, page 15.)

3. Export of Chinese Bristles

Before the development of China's bristle market, the world bristle producing areas mainly included the United States, Panama, Poland, Finland and Siberia of the Soviet Union. The quality of bristle is closely related to climate and region, and the variety of pig is also very important. China, Poland, Russia and the United States are all in the temperate zone and the cold zone. At first, the quality of bristles in these countries is not far from each other. With the development of capitalist industry and commerce, the production mode of pigs in these countries has improved day by day, and the varieties of pigs have been gradually improved. Most of their pigs focus on the production of meat. These industrialized pigs eat scientifically proportioned feed and live-in factories that are not afraid of wind and rain. Therefore, they grow fast and grow well. Accordingly, the bristle, which symbolizes the wildness, gradually degenerates and its quality gradually declines. Therefore, high-quality Chinese bristles gradually occupy the international market, which is inseparable from the backwardness of China's economy. During the period of the Republic of China, it is estimated that China's bristles accounted for about 60-80% of the world's supply. Table 2 shows the output and proportion of China's bristles to the world from 1934 to 1935:

Table 2. Comparison of bristle export countries from 1934 to 1935

Particular year	Export country	Output (public bear)	Percentage
1934	U.S. A	13240	31.48
	Britain	12036	28.61
	Japan	4808	11.43
	Germany	4756	11.31
	France	3060	7.27
	Belgium	2181	5.19
	Other countries	1982	4.17
	Total	42013	100
1935	U.S.A	15179	32.81
	Britain	11949	25.83
	Japan	5781	12.51
	Germany	6358	13.74
	France	3643	7.87
	Belgium	1669	3.61
	Other countries	1684	3.64
	Total	46236	100

(Reference: Cheng Yuanyu: Practice of exporting bristles, Shanghai: China cultural undertakings society, 1951 edition, page 31.)

In the international market, the types of Chinese bristles are generally divided into five categories: Northeast bristles, Tianjin bristles, Shanghai bristles, Chongqing bristles and Hankou bristles. These bristles vary in quality and price due to different places of origin. For example, the color of the most popular Tianjin bristles is 80 points, while that of Shanghai bristles is about 70 points, so its value is about 10% of that of Tianjin bristles.[6] It is estimated that the demand for bristles in various countries was about 6000 tons before World War II. China's annual supply was about 4400 tons, accounting for about 75% of the total supply.

Due to its excellent characteristics of good elasticity, high temperature resistance, acid and alkali resistance and long service life, the brush made of Chinese bristle has unique advantages in cleaning ships and artillery. It is an indispensable strategic material for a country. During the Second World War, Britain, the United States and other countries adopted a control policy on bristles because of the difficulty in the source of bristles. In wartime, the United States was uniformly purchased and sold by the national defense supply company, and stipulated that the bristle content of the brush should not exceed 55%. General paint brushes and other non-military materials had to be mixed with 45% horse bristles and bristles. Due to the high price and light weight of bristle, it is suitable for aircraft transportation. The United States even opened a Sino Indian route to fly over the Himalayan hump of more than 15000 feet from Kunming or Yibin. Its height is twice as high as that of aircraft at that time, and the risk is very high. According to statistics, 45% of the planes on the hump route have failed, and the United States even does not hesitate to sacrifice the lives of its airmen in exchange for China's bristles.[7] The United Kingdom also imposes restrictions on the use of bristles. The operators of bristles are limited to licensed businessmen, and the price of bristles is also regulated by the government. During this period, although artificial bristles have been used as substitutes, due to the excellent quality of natural bristles, especially in military, they are inferior to artificial bristles. The large export and price changes of Chinese bristles are the best proof. The price increase of Chinese bristle is shown in Table 3:

Table 3. Comparison of bristle price rise since 1938 (Unit: USD/public bear)

	1938	Early 1938	June 1938	November 1938
3.5 inches	2.00	5.35	7.25	9.75
4.0 inches	2.80	7.85	9.90	13.00
4.5 inches	3.65	9.50	12.00	16.75
5.25 inches	5.00	13.50	17.50	25.00

(Reference: Cheng Yuanyu: Practice of exporting bristles, Shanghai: China cultural undertakings society, 1951 edition, page 49.)

During the Second World War, due to the blockade of Japan, the export volume of Chinese bristles decreased sharply, so that the international price rose. After the end of the Second World War, the demand for Chinese bristles in various countries not only did not decrease, but increased year by year. There was a great trend of supply exceeding demand, and the pre war output was resumed soon. From the beginning of the first World War to the end of the Second World War, Chinese bristles have always maintained the position of the primary supplier in the foreign market.

4. The National Government's Policy of Unified Purchase and Marketing of Bristles during the Anti Japanese War

For decades, China's bristle foreign trade has been manipulated and monopolized by imperialist bourgeois foreign compradors. The general small and medium-sized bristle merchants have been oppressed and exploited by them, and have never had the opportunity to develop and grow. Before the Anti Japanese War, bristles were mainly purchased by traders at all levels at the origin, then gathered in Shanghai, Tianjin, Hankou, Chongqing and other places through intermediaries to process mature bristles in the washing room, and finally sold to Britain, the United States, Japan, Germany and other countries from Shanghai and Hankou with the help of foreign firms. Although China is the main supplier of bristles in the world, the sales price of foreign bristles cannot be controlled actively and is completely in a passive position. Bristle operators act in their own way, and there is little combination in procurement, transportation and marketing. Under blind competition, bristle prices at home and abroad are high and low, which is difficult to stabilize.

After the outbreak of the war of resistance against Japan, in order to adapt to the transformation of foreign trade policy, the national government allocated 20 million operating funds to engage in state-owned trade activities, of which a large part was used to purchase bristles all over the country, to achieve the purpose of mastering bristle resources by the state and earning foreign exchange through self-export. In September 1939, the national government promulgated the national measures for the unified purchase and marketing of bristles, which established the government's control over the unified purchase and marketing of bristles from the perspective of legislation. However, because bristles are primary agricultural products, scattered among farmers in rural areas, and it is difficult to unify the time for farmers to slaughter pigs, these problems have caused great difficulties for the national government in personnel scheduling, organization setting and factory distribution. Moreover, the government's excessive intervention in the production and purchase of bristle deprives the livelihood of grass-roots bristle merchants, which is not conducive to economic development. After a period of practice, based on the above problems, the detailed rules for the implementation of the revised national measures for the unified marketing of bristles were promulgated, which adopted the method of focusing on the large and letting go of the small, transferred the right to purchase and process raw bristles to businessmen at all levels, instead controlled the right to purchase finished bristles, and explicitly prohibited the hoarding or smuggling of cooked bristles for export.

The national measures for the unified marketing of bristles have been implemented for half a year. Due to the disorderly operation of bristle merchants, the chaos of the acquisition market, and the high price inducement of the enemy and puppets, smuggling is serious. In February 1940, the Ministry of Finance amended the original national measures for the unified marketing of bristles, stipulating that firms and stores operating bristles can purchase and sort out bristles on the mainland market only after they are registered with the Trade Commission. They can be sold to the Trade Commission according to the published brand price, and cannot operate and export on their own [8]. Since then, the certification qualification of bristle merchants was changed from private issuance to government control. The implementation of bristle business registration has raised the threshold for entering the bristle industry, strengthened the industry access standards of bristles, ensured the orderly purchase of bristles to a certain extent, and has an important impact on the controlled purchase of bristles.

Due to the huge profits of the bristle industry, before the national government implemented the unified purchase and marketing of bristles, many illegal bristle merchants hoarded goods and smuggling was rampant. In order to ensure that bristles are controlled for export, curb the spread of bristle smuggling and safeguard the country's economic and political interests, the Trade Commission has strengthened its anti-smuggling forces and conducted strict inspections in major cargo routes and smuggling strongholds. In view of the long coastline of our country and the crisscross of the lines of control between the enemy and ourselves, it is far from enough to patrol the main border roads alone. Therefore, Article 6 of the regulations on unified purchase of bristles promulgated in 1941 specifically stipulates those bristles shall not be close to the coastline, land border or within 100 kilometers of the enemy area. Violators shall be punished as smuggling. However, in order to make huge profits, smugglers often hire local officers and soldiers and local ruffians and bandits to escort them by armed means to deal with anti-smugglers. The escort fee is 50 yuan per ten li for each escort, and there is often a fight between the two sides.[9]

By controlling the foreign trade of bristles, the national government transferred the bristles from private businessmen to the government. As a strategic material, bristles supported the United States, Britain and other allies in exchange for their trade trust and support. From the actual effect of the unified marketing of bristles, through the control, it really played the role of the economic war of resistance against Japan. According to statistics, from 1942 to 1945, 155303 metric tons of bristles were exported to the United States, with a value of more than 200 million US dollars [10], higher than raw silk, tung oil and other commodities. The specific data are shown in Table 4:

Table 4. Main trade situation of the trade commission from 1942 to 1945

Cargo category	Company	Trading volume		For export		For the domestic market	
		Quantity	Value (USD)	Quantity	Value (USD)	Quantity	Value (Thousand yuan)
Pig 's Bristles	Metric Ton	926	8230567	2489	22279856	166	24057
Raw silk	Metric ton	199	7203312	376	21226863	233	595648
Tung oil	Metric ton	718	926495	12956	10015928	55234	1756477
Brick tea	Thousand pieces	489	1940103			144	189114
Tea	Metric ton			629	1048036	11667	317309
Leather	Thousand sheets	1300	945554	41	24631	473	15089
Plush	Metric ton	3941	2708558			13459	1928043

Source: Nanjing Second Historical Archives, Trade Commission archives,309(2)/184.

However, the disadvantages brought by the control policy are also obvious. Because the government controls the bristles and prohibits the free purchase and sale of private funds, the number of bristles exported by the government is limited every year, so that the allies have no bristles to lose when they are in urgent need of bristles. Since the unified purchase and marketing of bristles, bristles have been fully purchased by the government, and there is no difficulty in sales. Therefore, when washing and processing, the factories work more hastily and the process is rough, which degrades the quality of bristles. At the same time, due to the restrictions of the control policy, the bottom bristle merchants without voice are undoubtedly the biggest victims. A large number of grass-roots bristle merchants have disappeared, and China's bristle industry has lost its bottom vitality. However, objectively speaking, although the control policy has many disadvantages, the policy not only achieves the purpose of striving for foreign exchange, but also promotes the modernization and transformation of bristle industry.

5. Development of Bristle Industry after the Founding of New China

Meat is an indispensable nutrient for human beings, which is the main purpose of raising pigs. As a byproduct of pig industry, the quality and quantity of bristle are closely related to pig industry. The reason why modern Chinese bristle industry can dominate the world is that the poor and backward old Chinese pig breeding method is too primitive. Chinese bristles are closer to wild boar bristles, which are the best in the world in terms of length and hardness.

After the end of World War II, chemical fertilizers have been widely used in developed capitalist countries. There is no need to raise pigs to accumulate feces. The purpose of raising pigs in these countries is simply meat, and the output of bristles has further shrunk. After the founding of new China, farmers' productivity was liberated and their quality of life was greatly improved. Compared with foreign countries, the output of bristle did not decrease, but further increased. The main reason is that after the completion of the land reform, the farmers' economic situation has improved, the pig industry has become more and more developed, and the output has also increased.

New China attaches great importance to the production and export of bristles. For example, Xinjiang production and Construction Corps put forward the policy of "walking on two legs" in 1960. "We should pay attention to both major varieties and minor varieties; we should pay attention to both large and small ones." the Corps pointed out that the pig hair and bristle, which have always been regarded as waste, have high economic value. If the Corps slaughtered 550000 pigs in 1960, it deserves 165 tons of bristle, which can be exchanged for 275 tractors.[11] "We should vigorously organize the export of these things." compared with modern times, the export proportion of bristles after liberation has become larger and larger. In the decade of the 1970s, the average annual trade volume of natural bristles in the world was nearly 140000 cases, 80% of which were Chinese bristles. Britain, Italy and the United States are the main importers.[12] To sum up, China's bristle industry originated in the five-port trade period, and its development is stronger than that in the early years of the Republic of China. It has occupied the leading position in the world bristle trade since the 1930s. Until the 1980s, China's bristle is still the most representative foreign trade agricultural product of China. China's bristle industry has witnessed the collapse of the Qing Dynasty, the establishment of the Republic of China, the war of resistance against Japan and the establishment and construction of new China. Even today in the 21st century, China's bristle industry is still booming with vitality.

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