

Study on the Export of Selenium-Enriched Tea in Chizhou

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Abstract: With the development of economy and the improvement of living standards, people are increasingly seeking a better quality of life. Tea is recognized as a green and healthy drink because of its health benefits. Se-enriched tea is famous for its high selenium content which is beneficial to health. ShiTai County of Chizhou City, Enshi of Hubei Province and Ziyang of Shaanxi Province are known as the “three natural selenium rich areas in China”. ShiTai County is a key tea-producing county in Anhui Province, and tea is the leading industry of the county’s rural economy. Relying on this, the local government vigorously promotes the development of selenium-enriched tea, selenium-enriched rice and selenium-enriched wine. However, compared with Enshi and Ziyang, the development of selenium-enriched tea industry in Chizhou and the province is less advanced, let alone its influence in the country and the world. We studied the characteristics of Chizhou selenium-enriched tea and its export status through research, and explores the existing problems in export, and proposes effective suggestions for stakeholders to improve the export of selenium-enriched tea in Chizhou and ultimately promote the economic development of Chizhou.

Keywords: Brand building; Export; Selenium-enriched tea

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1. Introduction

China was the first country to discover and utilize the tea plant. As early as 1500 years ago, Chinese tea was traded with countries in Asia and Europe through the ancient Silk Road ^[1]. Since the reform and opening up, China has become more and more closely connected with the world. With the further development of economic globalization, China’s import and export have become increasingly prosperous. Tea export occupies an important position in China’s export. In 1996, the export value of agricultural and sideline products announced by the Ministry of Foreign Trade and Economic Cooperation ranked ninth in foreign exchange earnings from the exports ^[2]. In 2003, China’s tea exports reached 259,900 tons, ranking third in the world. In 2010, tea exports reached 302,400 tons, accounting for 17.48% of the global tea exports during the same period, surpassing Sri Lankan to

take second place in the world.

Chizhou is one of the 27 central cities in the Yangtze River Delta and an important riverside port city on the south bank of the Yangtze River, long renowned for its ecology. Some mountainous areas in Chizhou are particularly suitable for growing high-quality tea due to their unique geographical climate and natural resources. Dacun Village, located in Xianyu Town, ShiTai County, Chizhou City, is one of China's three major selenium-rich villages. As statistics show, China suffers from severe selenium deficiency, with approximately 72% of the soil being severely deficient in selenium^[3]. The average selenium content in the village's soil is highly beneficial to human health, and the selenium-rich tea produced there is also highly nutritious.

China has a long-standing tea-drinking culture, especially among the elderly. With the growing awareness of health, young people also love drinking tea these days, resulting in a raise in the demand for health beneficial teas. Chizhou's Selenium-enriched tea is a national landmark product because it is rich in selenium, which has unique effects on promoting physical health. Despite the current trend of increasing pursuit of healthy products, after field research, it is found that its Selenium-enriched tea, which should have sold well, is facing a series of problems. Due to factors such as insufficient standardization and a lack of independent brands, Chizhou's selenium-rich tea has not yet gained influence even in the domestic or provincial tea market, let alone broken into the international market.

2. Current situation of the export of selenium-enriched tea in Chizhou

Selenium rich tea, as a special type of tea, has attracted much attention. Selenium-rich tea contains abundant tea polyphenols, caffeine, selenium, and amino acids, which help combat oxidation, prevent cardiovascular diseases, promote metabolism, and enhance immunity. ShiTai County in Chizhou city, Anhui Province is renowned for its selenium rich tea. Soil and tea surveys conducted since 2002 have consistently shown that the soil and tea leaves in ShiTai County, Chizhou City, are rich in selenium. It has a unique geographical environment with rich selenium containing soil, which provides favorable conditions for the growth of selenium rich tea. After on-site visits and investigations in ShiTai, it can be seen that the selenium content in ShiTai soil is 0.569mg/kg, which is very in line with the human body's demand standard. In addition, data shows that most people are deficient in selenium. The selenium rich tea produced here not only has the general health promoting properties of tea but also contains a certain amount of selenium, which endows it with additional health benefits.

However, based on multiple field investigations conducted in ShiTai, the export volume of selenium-rich tea from Chizhou remains very limited, and the target export markets are also highly restricted. According to the statistics from Chizhou Municipal Bureau of Commerce, there are only two tea export enterprises in the commercial department, one is the Rixin tea industry in ShiTai County, and the other is the Guorun tea industry.

Rixin tea industry exported \$223000 in January–August 2020, of which Algeria (\$127000) and Morocco (\$96000). Guorun tea industry exported \$181000 in January–August 2020, of which Japan (\$126000) and Switzerland (\$55000). As seen, not only is the export volume low, but the target regions for tea exports are also very limited. In contrast, the export situation of selenium-rich tea in Enshi, another one of China's three major natural selenium-rich areas, is significantly different. As of 2010, Enshi state record a total of more than 30 tea export enterprises, and the total export volume of tea products reached 3200 tons^[4]. Through comparative analysis, it is easy for people to figure out that export enterprises, export regions, export varieties and export volume of Enshi selenium-enriched tea are all better than those of Chizhou's.

3. Problem statements

The sluggish export performance of Chizhou's selenium-rich tea is attributable to multiple factors. Based on field investigations, we have identified the following key issues hindering its export development.

3.1. Weak brand awareness

There are few leading export enterprises in Chizhou, and the only larger ones are Rixin Tea Industry in ShiTai County and Guorun Tea Industry directly under the city. The investigation revealed that Chizhou has a scarcity of specialized export-oriented tea companies. Only a handful of large, well-resourced tea companies engage in export activities which are secondary to their dominant domestic sales, and the development of dedicated export brands is virtually non-existent.

In 2025, we have made a detailed investigation in ShiTai County. It can be seen that Chizhou selenium-enriched tea has no related brand introduction on the packaging, which only highlights the local characteristics of Chizhou City (**Figure 1**).



Figure 1. Packaging of Chizhou selenium-enriched tea.

3.2. High pesticide residues

Tea garden management is the source of tea quality clearance. It is the key to ensure the quality of tea planting in production and picking. However, the management of tea garden by farmers and general production personnel cannot control the quality of tea production and picking. Tea enterprises buy dry tea and fresh leaves from farmers, the purchased fresh leaves need to be processed, the processing process is not standardized which may easily lead to secondary pollution of tea.

The total consumption of tea plants in Anhui Province is about 350 tons per year, of which fenvalerate, deltamethrin, acetyl methamidophos, dichlorvos and omethoate account for 60%–70%, and the average consumption of pyrethroid pesticides such as fenvalerate on tea is 50 mL, and the number of organophosphorus pesticides is 100 mL per m.u., which makes the tea leaves highly susceptible to pesticide residue.

3.3. Lack of deep processing

The common deep processing products of tea include tea powder, tea wine, tea seeds, bottled tea and so on.

However, after our field investigation, it is found that Chizhou selenium-enriched tea still has shortcomings in the deep-processing, only in terms of packaging, grams differentiated processing, and no further processing. Among the enterprises investigated, only 4 enterprises hope to invest in tea research and development and deep processing in the future. Therefore, tea exports sometimes cost much higher than at home, especially the rise in labor costs, which makes many export enterprises daunting^[5].

3.4. Poor packaging

There are obvious deficiencies in the packaging of ShiTai selenium-enriched tea. The packaging design of most products is simple and rough, lacking attractiveness. The choice of packaging materials is single, mostly ordinary paper boxes or plastic bags, which makes it difficult to highlight the value of ShiTai selenium-enriched tea as a special product and a national geographical indication product. Moreover, the moisture-proof and fresh-keeping functions of some tea packaging are inadequate, affecting the long-term preservation of tea quality. Although there are clear restrictions on excessive packaging of tea in China at present, ShiTai selenium-enriched tea has gone to the other extreme. The overly simple packaging is not conducive to the promotion and sales of products in the market, especially in the gift tea market, and it is difficult to meet consumers' needs for aesthetics and quality.

3.5. Incomplete industrial chain

The upstream and downstream of the selenium-rich tea industry do not cooperate closely enough. In terms of the planting link, although the local soil is rich in selenium, there is a lack of unified guidance and investment in tea tree planting technology and variety improvement. The management of some tea gardens is extensive, affecting the further improvement of tea yield and quality. In the processing link, except for a few large-scale enterprises with relatively advanced equipment and technology, most family-workshop-style processing plants have old equipment and traditional processing techniques, with low efficiency, making it difficult to achieve standardized and large-scale production. In the sales link, the channels are relatively single, mostly relying on offline store sales and acquaintance referrals, with limited market development capabilities. The entire industrial chain has not formed an efficient linkage mechanism, thereby restricted the growth and strengthening of the industry.

4. Suggestions on the export of selenium-enriched tea in Chizhou

“ShiTai Selenium-Rich Tea” is thus far the only product from Chizhou City with strong local characteristics that has passed the preliminary review by the former General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). In the process of accelerating the development of a modern “Three-Excellence” Chizhou, the growth of characteristic industries, such as cultural tourism, health and wellness, and selenium-rich foods, has consistently been a government priority. Fully mobilizing all relevant stakeholders to support the export of Chizhou’s selenium-rich tea is of significant importance. To this end, the following recommendations are proposed:

4.1. Quality improvement

Relevant government departments should take the lead in assisting tea farmers by introducing high-quality tea plant varieties and renovate old tea gardens. It is essential to strengthen the monitoring of local soil conditions and implement rational formula-based fertilization to provide an optimal growing environment for the tea plants. This will ensure a supply of higher-quality and more diverse selenium-rich tea for export. Simultaneously, tea growers

in Chizhou should enhance the management of tea plantation cultivation, standardize the use of pesticides and fertilizers, apply them appropriately and in moderation, and strengthen the prevention and control of plant diseases and insect pests. These measures will collectively improve the overall quality of Chizhou's selenium-rich tea.

4.2. Deep processing

On one hand, the government of Chizhou should increase capital investment, set up a marketing team to strengthen the strategic layout and program formulation of brand building, focus on supporting the brand building of leading enterprises, strengthen scientific and technological research and development, and improve the added value and export output value of tea. On the other hand, according to the advantages of their own tea brand, Chizhou's enterprises should combine their own product characteristics, rather than rush to reflect the differentiation of their own products, identified by consumers.

4.3. Brand building

It is necessary to strengthen the brand construction of Chizhou selenium-enriched tea if one wants to raise the competitiveness of Chizhou selenium-enriched tea in the international market. Anhui Province has a long history of tea culture, and Chizhou's selenium-rich tea possesses unique characteristics. Enterprises should establish their own brands based on these product features, conduct precise positioning for both the products and the brand, adopt distinctive packaging, strengthen brand promotion, and ultimately guarantee the good reputation of the company and its brand through quality.

4.4. Construction of public brand

The core value of ShiTai Selenium-enriched tea should be defined as its natural selenium enrichment and health-nourishing attributes. Leveraging the unique ecological environment of ShiTai County, the brand emphasizes the health benefits of naturally occurring selenium in tea, positioning itself as a high-end health-oriented tea brand. In support of this development, the ShiTai County Government has introduced several initiatives, as outlined in its 2023 Notice on Accelerating the High-Quality Development of the Tea Industry.

These measures focus on strengthening processing entities and guiding local tea enterprises toward standardization, specialization, scaling, and branding. Efforts are being made to enhance the tea industry chain and to develop a robust "ShiTai selenium Tea" industrial cluster. Recognizing that brand power is a critical instrument for product competitiveness in domestic and international market, and an essential means of cultivating consumer trust, the government encourages the integration and restructuring of existing tea enterprises, factories, cooperatives, and family farms through joint ventures, mergers, and acquisitions ^[6]. This restructuring aims to facilitate the transformation of household producers into enterprises, promote enterprise upgrading, and foster a group of leading tea enterprises with strong growth potential and market influence.

To expand the industry's market reach, the government actively seeks to attract industrial capital, industry leaders, and listed companies to collaborate with local tea enterprises, thereby accelerating the marketization of ShiTai selenium-enriched tea. By 2025, the plan targets the cultivation of over 20 key tea enterprises with annual processing output values exceeding 5 million Chinese Yuan, alongside the development of more than five large-scale enterprises.

Marketing and promotion efforts are also prioritized. ShiTai tea enterprises are encouraged to participate in major domestic and international exhibitions, such as the China International Tea Industry Expo and the

Guangzhou Tea Expo, to enhance visibility and consumer engagement. Distinctive exhibition booths, interactive tea-making experiences, live performances, and tasting sessions are used to attract visitors and convey the brand's unique cultural and health value. Concurrently, participation in professional tea evaluation activities is promoted to enhance brand reputation and credibility through recognition from expert judges and award institutions.

4.5. Simplification of export process

In order to support the export of tea enterprises in Chizhou, the government needs to provide funds and policy facilities for export enterprises to create good export conditions and open green channels to encourage small and medium-sized tea enterprises with the ability to actively realize their exports. Also, the government in Chizhou should set up export offices for small and medium-sized tea enterprises and simplify business processes and facilitate their services. Besides, the government in Chizhou should provide instant information on the international market for export enterprises and help enterprises grasp the international market dynamics in time.

Enterprises in Chizhou have strong export intention can establish credit files of export enterprises, the government in Chizhou should encourage enterprises with better credit to export and provide appropriate export subsidies to export enterprises. The Chizhou municipal government should also strengthen financial support for export-oriented tea enterprises and broaden the financing channels available to small and medium-sized tea producers. It is essential to create favorable foundational conditions for export financing, while guiding collaboration among government departments, participating tea enterprises, and financial institutions. Furthermore, the establishment of specialized financing guarantee institutions is recommended to reduce credit risks and enhance the accessibility of capital for tea enterprises engaged in international trade.

4.6. Tea tourism integration

To promote rural revitalization through the tea industry, it is essential to integrate tea culture, tea industry, and tourism resources, thereby establishing a diversified and synergistic industrial structure. By infusing the tourism sector with tea culture and optimizing the allocation of resource elements, the region can accelerate the integrated development of tea and tourism industries ^[7].

The advancement of tea culture tourism, supported by the deep processing and value extension of tea products, can drive the development of tea garden sightseeing, tea-based food and beverages, and tea product retailing, thereby enhancing the overall economic efficiency of the tea industry ^[8]. Leveraging tea plantations as a carrier for leisure agriculture and rural tourism helps transform the region's natural ecological assets, its "green mountains and clear waters", into "gold and silver mountains," promoting both ecological conservation and economic gain.

Through innovative tea tourism business models, efforts are being made to create high-quality tea tourism routes, transform tea gardens into scenic destinations, extend industrial and value chains, and facilitate the transformation and upgrading of the traditional tea industry ^[9]. In ShiTai County, for example, a series of tea garden sightseeing projects are being developed in major plantation areas. Sightseeing trails allow visitors to stroll through tea gardens, appreciate the verdant landscape, and learn about the ecological environment in which tea grows. A tea-picking experience zone enables tourists to personally harvest tea leaves and enjoy hands-on engagement, while a tea-making workshop invites professional tea artisans to guide visitors through key production steps, such as withering, rolling, and drying, offering a deeply immersive experience in traditional craftsmanship.

Additionally, multiple tourism routes centered on ShiTai selenium-enriched tea are being designed in

conjunction with local attractions such as Guniujiang Nature Reserve and Penglai Immortal Cave to form comprehensive tourism products. For instance, the “Two-Day Tea Garden Exploration Tour of Natural Wonders” features tea-picking and tea-making experiences on the first day, followed by eco-tourism activities in Guniujiang on the second day. Promotion of these routes through travel agencies, online travel platforms, and social media influencers aims to attract broader tourist participation.

To complement these efforts, a network of tea-themed homestays is being established near the plantations. These accommodations incorporate tea culture into their design, through tea-inspired decor, tea set displays, and cultural motifs, and offer specialty tea-infused cuisine, such as tea stir-fried eggs, tea-flavored pork ribs, and selenium-rich tea snacks. Moreover, these homestays host tea culture lectures and tea art performances, enriching the visitor experience and deepening engagement with Shitai’s distinctive tea culture.

4.7. Digital marketing and social media promotion

To enhance the brand influence and market competitiveness of ShiTai selenium-enriched tea, a comprehensive digital marketing and e-commerce strategy should be established. An official website should serve as the core platform, providing detailed information about the brand’s origin, product varieties, tea garden ecology, and the health benefits of selenium-rich tea. The website’s design should emphasize simplicity, aesthetic appeal, user-friendly navigation, and integrated online purchasing functions to improve consumer accessibility.

In parallel, official flagship stores should be launched on major e-commerce platforms, broadening sales channels and facilitating multi-platform visibility. Marketing tools such as live-streaming sales, limited-time discounts, and promotional campaigns can be employed to attract potential consumers and stimulate purchase intentions. As a key component of live-streaming e-commerce, the behavior and communication style of anchors significantly shape consumer decision-making. Detailed product demonstrations and authentic storytelling by anchors can help consumers quickly grasp product characteristics, effectively shortening the decision-making process and encouraging purchase behavior ^[10]. In addition to e-commerce, sustained social media engagement plays a vital role in building brand recognition and consumer trust. High-quality multimedia content should be regularly disseminated through platforms such as WeChat Official Accounts, Weibo, TikTok, and Xiaohongshu. This content can include:

- (1) Educational posts explaining the differences between selenium-rich tea and conventional tea and the physiological benefits of selenium;
- (2) Visual storytelling, showcasing the scenic landscapes of ShiTai’s tea gardens and the artisanal tea-picking process;
- (3) Tea art tutorials, teaching audiences how to brew ShiTai Selenium-enriched tea;
- (4) User-generated stories, where consumers share their personal experiences with the brand.

To foster community participation and strengthen consumer engagement, interactive online activities, such as topic discussions, lucky draws, and check-in challenges, should be organized. For instance, a Weibo campaign under the hashtag “My Story with ShiTai selenium-enriched tea” could encourage users to share tea-tasting experiences, with selected participants receiving tea gift packages. On TikTok, a “ShiTai selenium-enriched tea brewing challenge” could invite users to upload brewing videos and tag the official account, with exemplary submissions receiving awards. Such activities enhance user stickiness and brand visibility through participatory interaction.

Furthermore, collaborations with key opinion leaders (KOLs) in fields such as health, gastronomy, and

lifestyle can amplify brand exposure. Inviting influential KOLs to experience and recommend ShiTai selenium-enriched tea through product review videos, live-streaming sessions, and expert commentary can effectively leverage their follower networks. For example, partnerships with health bloggers could produce educational content highlighting the nutritional advantages and sensory qualities of selenium-rich tea, guiding audiences toward informed purchasing decisions.

5. Conclusion

In summary, as a characteristic industry of Chizhou, selenium-rich tea has not yet attained its due position in the domestic market, let alone the international one, due to issues concerning its intrinsic quality, brand building, and industrial structure. Therefore, moving forward, we must seize the opportunities of the times. Starting with improving product quality, we should strengthen brand building and promote product optimization and diversification, with the aim of better driving the export development of Chizhou's selenium-rich tea.

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