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Present Situation and Development Strategies of Litchi Industry in Huizhou City

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Abstract This paper analyzes the current situation of the development of litchi industry in Huizhou City, points out the existing problems, and puts forward the strategies for the development of litchi industry in Huizhou City: increasing support to promote the high-quality development of litchi industry; using insurance policy to protect the litchi industry; developing science and technology, professional and technical team to promote the industry; strengthening brand quality monitoring.

Key words Litchi, Huizhou City, Industrial Development, Development strategies

1 Introduction

Huizhou City (22°24'–23°57' N, 113°51'–115°28' E) is located in the southeast of Guangdong Province, the northeast of the Pearl River Delta and the middle and lower reaches of the Dongjiang River, with a land area of 11 300 km² and a sea area of 4 520 km². Huizhou has a subtropical monsoon climate, with the Tropic of Cancer running through the city. It has abundant annual rainfall, sufficient sunshine and mild climate, with an average annual rainfall of 2 000 mm and an average temperature of 22 °C, which provides a unique geographical environment for the development of litchi industry. Huizhou is one of the main producing areas of litchi in Guangdong Province, with a long history and profound cultural heritage. "I'd rather be a southerner if I could have 300 litchis a day" makes Huizhou litchi famous all over the world. As the most representative agricultural product in Huizhou, litchi has become one of the important industries to promote rural revitalization in Huizhou.

2 Present situation of development

2.1 Planting area and yield According to statistics, the total planting area of litchi in Huizhou was 20 100 ha in 2021, with an annual output of 105 900 t, mainly distributed in Huiyang, Huidong and Boluo (Table 1). There are 25 000 century-old trees in Zhenlong in Huiyang District, Luofushan and Gongzhuang in Boluo County, Duozhu and Renshan in Huidong County.

2.2 Main cultivated varieties Huizhou litchi is rich in varieties, mainly including "Guiwei", "Nuomi", "Feizixiao" and other high-quality varieties. In recent years, excellent varieties such as "Jinggang Hongnuo", "Lingfengnuo" and "Guishuang" have been introduced and cultivated. The products are mainly fresh food, and the processed products are dried litchi, litchi wine, litchi vinegar and litchi black tea.

Table 1 Planting area and yield of litchi in various counties (districts) of Huizhou City in 2021

County and district	Planting area//ha	Output//t
Huicheng District	1 039.07	8 646
Huiyang District	6 268.27	13 214
Huidong County	5 339.73	36 628
Boluo County	4 615.53	42 874
Longmen County	550.07	2 144
Zhongkai District	476.67	535
Daya Bay Area	1 843.33	1 911
Total	20 128.67	105 952

2.3 Regional public brand Huizhou has two litchi regional public brands, "Zhenlong litchi" and "Luofushan litchi", winning the national geographical indication agricultural products, among which "Zhenlong litchi" was selected into the Chinese agricultural brand list and 2019 agricultural regional public brand. "Shanqian litchi" and "Zhenlong litchi" are listed as national famous, special, excellent and new agricultural products, and there are 6 "Guangdong brands", such as "Danli", "Shanding" and "Shanqian". A total of 4 professional towns and 15 professional villages have been built. 3 (Zhenlong, Taimei, Longjiang) have been identified as provincial professional towns, and 9 have been identified as provincial professional villages (Liucun, Leigong, Lianxin, Jinglong, Shanding, Shencun, Shanxia, Gankeng, Xilian).

2.4 Production and marketing The varieties of litchi in Huizhou are basically medium-and late-maturing varieties, and come into season between late June and mid-July, which is later than several other major producing areas in the province and just avoids the situation that centralized appearance on the market leads to high quantity and low price. The industry is mainly to sell fresh products. In 2020, 2 200 t of Huizhou litchi went abroad for the first time and exported to Canada, South Korea, Singapore and other countries to achieve simultaneous sales at home and abroad.

3 Problems

Huizhou litchi has the local advantages and characteristics in

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terms of planting scale, planting variety, brand and so on, but there are still the following problems in the development of litchi industry.

3.1 Planting management

3.1.1 Extensive orchard management and backward infrastructure. Huizhou litchi involves a lot of decentralized planting, and the overall management of cultivation is relatively extensive. Litchi production intensity is high, labor and production costs rise, the benefit per unit yield is low, and even there is the phenomenon of loss. Many factors such as the changeable influence of extreme climate lead to the instability of litchi yield and income, which seriously affects the enthusiasm of fruit growers.

3.1.2 Imperfect industrialized operation and incomplete industrial chain. Litchi production is mainly part-time, and the scale of operation is small, so it is difficult to form economies of scale. There are few leading enterprises, and the real interest community of leading enterprises, commodity bases and fruit growers has not been formed, which leads to weak driving force and limited influence.

3.2 Brand promotion Huizhou has two national geographical indication regional public brands of agricultural products, "Zhenlong Litchi" and "Luofushan Litchi", 5 major producing areas of litchi, 4 specialized towns and 15 specialized villages of litchi, but the brands are scattered and not well-known. It is the main reason why it is difficult for Huizhou litchi brand to become stronger and bigger.

3.3 Fruit circulation The main producing areas of litchi in Huizhou are concentrated in Huiyang, Boluo and Huidong. Litchi is easy to rot, and the shelf life is relatively short. There are relatively few litchi distribution centers in Huizhou, coupled with the fact that freezer transportation and perfect cold chain have not yet been popularized in litchi transportation, which to a certain extent limits the external sale of litchi in Huizhou. Therefore, the post-harvest storage and transportation technology of litchi has become an urgent problem to be solved in production^[1].

4 Development strategies

4.1 Increasing support to promote the high-quality development of litchi industry First, it is necessary to promote the high-standard production of litchi, consolidate the cold chain logistics foundation and enhance the litchi planting infrastructure, expand exports, promote the upgrading of litchi marketing, tourism, brand and other industries, and work together to build the brand of high-quality litchi in Huizhou City and to build the main producing area of high-quality litchi products in Guangdong, in order to increase the income of farmers, and lay a solid foundation for promoting the revitalization of rural industries. Second, we should vigorously promote the upgrading of the litchi industry chain of "production + modern circulation + brand + science and technology + service", and improve the mechanism for farmers to share the value-added benefits of the industry. Third, the versatility of litchi industry needs to be developed at the top level. The production benefit of litchi in Huizhou is generally limited, but the development of its ecological and cultural life functions is of great significance to the improvement of industrial efficiency and the

creation of beautiful villages. Taking the rich ancient tree resources in Huizhou for example, we can make use of the ancient litchi trees and continuous litchi forests along the Xizhi River in Huidong County to carry out protective development such as ecotourism, which can promote the local economy and improve the enthusiasm of fruit growers.

4.2 Using insurance policy to protect the litchi industry It is necessary to actively implement the policy-oriented Lingnan characteristic fruit insurance policy and promote litchi planting insurance. In recent years, extreme weather has a great impact on the production of litchi, and fruit farmers have increased their awareness of participating in the insurance of litchi planting. The implementation of policy insurance shares the risk for fruit farmers, and reduces losses to benefit thousands of fruit farmers. It is necessary to coordinate financial institutions to provide preferential credit services for litchi circulation and processing operators, so as to solve the demand for centralized funds in a short time.

4.3 Developing science and technology, professional and technical team to promote the industry It is necessary to build an industry-university-research platform involving leading enterprises, commodity bases, fruit growers and scientific research institutions, and encourage them to give full play to their advantages and do a good job in scientific and technological services for the litchi industry. First, it is necessary to introduce high-quality varieties of litchi and key technologies about planting, picking and packaging of litchi, prolong the shelf life of fresh litchi fruit, improve the scientific and technological awareness and management awareness of fruit farmers, enhance the technical level of cultivation and management, and vigorously promote high-quality varieties to improve labor efficiency and unit output^[2]. Second, it is necessary to formulate standardized litchi production rules, promote the standardization of litchi products, demonstrate and promote the application of organic fertilizer, low-toxicity, low-residue and biological pesticides, and strive to create a number of standardized and high-quality ecological litchi orchards and realize the green development of litchi industry^[3]. Third, modern machinery, science and technology, and information technology should be introduced into litchi production to realize the high quality varieties, green prevention and control, intelligent watering and fertilization, mechanized production and digital management to promote the high-quality development of litchi industry in Huizhou.

4.4 Strengthening brand quality monitoring With the enhancement of residents' awareness of epidemic prevention and control, consumers pay more attention to the safety and quality of agricultural products, and price is no longer the decisive factor, hygiene and fresh food become the primary decision-making factors. The epidemic has magnified consumers' demand for the safety and quality of agricultural products and promoted consumption upgrading. It is necessary to force agricultural operators to make better efforts at the supply side, speed up the construction of agricultural product standardization, branding and quality traceability system, and give full play to the synergy of agricultural product supply chain in order to quickly respond to consumers' demand for convenient consumption, safe consumption and quality consumption. Therefore, firstly, we need to make continuous efforts to build sta-

ble and high-quality orchards, make progress in the logistics cost control and the improvement of logistics efficiency in e-commerce sales, and broaden the channels of tourism consumption market. Secondly, efforts should be made to develop the existing litchi regional public brands, give full play to the excellent variety advantages of local litchi in Huizhou, and realize the sustainable development of litchi industry chain characterized by "large-scale production, improved varieties, scientific management and industrial management" while ensuring the output and quality.

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ment and new technology promotion models according to the actual conditions of producing countries. For example, China may explore and establish a new model of "government + tropical standards committee + national banana industry system + leading enterprises + farmers" as the main body, and carry out the promotion of "new technology + standard procedures + clarification note + demonstration base". It is recommended to provide main technical standards of Chinese bananas for the countries along the Belt and Road for demonstration and promotion^[21-22], and establish "government + scientific research units + going global enterprises + banana farmers" as the main body. Besides, it is recommended to carry out cooperation and exchange of technical standards through "going global" and "inviting in", effectively improve the application and radiation range of main technical standards for bananas, improve the banana quality and increase the banana yield, and create a banana brand with world influence.

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