

Study on the Current Situation and Countermeasures of Fruit and Pharmaceutical Cropping Industry in the Context of Rural Revitalization

--Taking Zunyi City's Broadcasting District as an Example

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ABSTRACT

The Rural Revitalization Strategy is the key initiative for achieving a well-off society in China and plays a crucial role in promoting agricultural and rural economic development. In 2022, the 20th National Congress of the Communist Party of China clearly proposed the implementation of the Rural Revitalization Strategy, emphasizing the goals of "prosperous industries, eco-friendly living environments, civilized rural culture, effective governance, and improved living standards" as essential requirements for building a moderately prosperous society in all respects. "The strength of agriculture, beauty of rural areas, and prosperity of farmers" directly determine the level of the moderately prosperous society and the quality of socialist modernization. As an important region in the rural economic development of Guizhou Province, Bozhou District in Zunyi City has adopted the Rural Revitalization Strategy as the main driver of economic and social development, accelerating agricultural modernization, enhancing agricultural quality, efficiency, and competitiveness, in order to achieve overall rural revitalization.

KEYWORDS

Rural Revitalization Strategy; Agricultural Modernization; Economic Development

1. INTRODUCTION

Rural revitalization strategy is the new requirements of the CPC Central Committee for the development of China's agriculture and rural areas, and is also an inevitable choice to achieve the "two hundred years" goal and the Chinese dream of the great rejuvenation of the Chinese nation. As an important part of Guizhou's new regional development pattern of "one trunk, multiple branches, and five areas of synergy", Zunyi City's broadcasting district has always promoted the development of the agricultural industry as an important hand to promote the strategy of rural revitalization, based on the construction of the "four in the farm - beautiful countryside", to accelerate Based on the construction of "four in the farm - beautiful countryside", it has accelerated the structural adjustment and transformation and upgrading of the agricultural industry, and enlarged and strengthened the characteristic agricultural industry. This paper takes Zunyi City, Guizhou Province, broadcasting district as an example, through field research, visits and exchanges, etc., to analyze the current situation of the development of the local fruit and medicine planting industry, with a view to providing decision-making references for the broadcasting district to build a demonstration area for the development of modern featured agriculture.

2. GENERAL INFORMATION ABOUT THE DISTRICT OF BANZHOU

Located in the southeastern part of Guizhou Province, the district is situated on the watershed between the Yangtze River and Pearl River basins and belongs to the karst landscape. The district has 11 towns and 6 street offices under its jurisdiction, with a total land area of 346.17 square kilometers and a population of 554,000 people. Among them, the agricultural population is 568,000, and the per capita disposable income of rural residents is 9,767 yuan, which is among the highest in the province.

Broadcasting District is located in the hinterland of Qianzhong, is an important part of the Qianzhong Economic Zone. In recent years, the broadcast state area to the Chinese herbal medicine industry as to promote the structural adjustment of the agricultural industry, realize the important way of farmers to increase income and wealth, give full play to the advantages of resources, around the "four business cards" (Chinese herbs, chili peppers, tea, roasted tobacco) and "three key" (quality) Food, high-quality vegetables and fruits), in accordance with the "four belts, four gardens and two bases" development ideas, in the planting scale, adhere to the "regional layout, standardized production, large-scale operation" road, in the planting technology, adhere to the "science and technology, quality of medicine, quality" approach. In the planting technology, adhere to the road of "science and technology, quality of medicine", in the business model, adhere to the road of "company + base + farmers", and actively promote the standardized production of Chinese herbal medicines, and gradually realized by a single traditional planting to the planting of Chinese herbal medicines, processing, sales of integrated development. The company has been actively promoting the standardized production of Chinese medicinal herbs. Zunyi City, Guizhou Province, broadcasting district with unique natural ecological resource advantages, in the field of Chinese herbal medicine planting has shown a good trend of vigorous development. In 2024, the region's forest economy expanded to 305,000 acres, forming a pattern of planting Chinese medicinal herbs mainly in the form of tianma, huangjing, duchess, poria, qianhu, dahurica, etc. In the distribution of varieties, each region has its own unique natural ecological resources, and the development of Chinese medicine planting has shown a good trend. In the distribution of varieties, each place is adapted to the local conditions, Leshan Township, New Earth Village, the main focus of Wu Hong hybrid asparagus; Tuanxi Township, Production Village, vigorously develop cypress, Poria, Poria, Huangjing, etc.; Fengxiang Township, Gouba Village, focusing on Duchenne industry, and actively exploring Duchenne forest mistletoe fern epiphytes of the innovation of the planting; Jixin Village, Jiangjiang Township, planting asparagus, Poria, Xuanzhenshen, Baibei and other varieties; Wujiang Township, Yanglong Village, is planting forewillow, dahuric dahuric dahuric dahuric dahuric dahuric dahuric, Huangjing and other medicinal herbs The village of Yanglong in Wujiang Township is mainly planting medicinal herbs such as Radix et Rhizoma Pinelliae, Radix Angelica dahurica and Rhizoma Polygonati.

In terms of planting mode innovation, Broadcasting Area actively explores diversified paths and is committed to enhancing land use efficiency and economic benefits. Tuanxi Town production village through the scientific set of seeds, realize the mountain tungzi, cypress, yellow essence up growth, Poria down development, make full use of the space between the rows of woodland; Fengxiang Town, Gouba Village to create a composite planting mode under the forest mistletoe fern epiphytic; Wujiang Town, try to forest medicine set of seeds, fruit and medicine set of seeds, etc., for the traditional Chinese medicine industry to inject new vitality. At the same time, broadcasting district adopts "party branch + cooperatives + company + base + farmers" "cooperatives + company + base + farmers" "cooperatives + village committee + farmers" and other diversified forms of organization to promote the development of the industry. that promote industrial development. Jixin Village, Jiangjiang Town, under the leadership of the party branch and the village task force, the establishment of cooperatives to transfer land to build planting bases, the organization of planting households to carry out order production, and the introduction of enterprises to ensure the acquisition of medicinal herbs; Zero Brothers Limited Liability Company and the town of Leshan, the local cooperatives of the village of

the new soil, the use of wild planting technology to develop forest tianmao, to achieve a win-win situation for all parties.

In 2024, the output value of the whole industry chain of forest economy in the broadcasting area will reach 900 million yuan, the output value of specialty forest industry will be 300 million yuan, and the comprehensive output value of forestry will be as high as 3.52 billion yuan. Chinese herbal medicine planting not only led to regional economic growth, but also opened up a new way for villagers to increase their income. The villagers who work in the Tianma planting base can get about 150 yuan of labor remuneration per day, and the villagers who own the forest land can also get additional transfer fees.

In the future, we will continue to strengthen the top-level design of forest economy, optimize resource allocation, actively extend the industrial chain, and strengthen service guidance. Through the planning and construction of the forest economy corridor, the deep integration of tourism and rural recreation industry, to promote the comprehensive revitalization of the countryside, so that the Chinese herbal medicine industry has become a strong engine for regional economic development and farmers to get rich.

3. VALUE OF CHINESE HERBAL MEDICINE INDUSTRY IN VILLAGE C, BAOZHOU DISTRICT, ZUNYI CITY

In recent years, Zunyi City, broadcasting area based on regional resource endowment, in-depth implementation of the rural revitalization strategy, focusing on the promotion of bee sugar plums and Chinese herbal medicine composite planting model. The district through scientific planning to achieve synergistic development of fruit and medicine, in Longping, Tuanxi and other townships built standardized planting bases, of which the Chinese herbal medicine planting area exceeded 1800 acres, the annual harvest of fresh herbs amounted to more than 3,000 tons, to achieve the value of agricultural output of more than 900 million yuan; honey plum planting area expanded to more than 3,500 acres, with an annual production of more than 6,000 tons of high-quality fresh fruits, with an annual sales breakthrough of 40 million yuan, driving 21 village Collective economy to realize income. In the planting practice, broadcasting district innovation using "three-season crop rotation" mode, according to the difference in altitude, respectively, planting Tianma, Huangjing, He Shouwu and other local medicinal herbs. Technical personnel through comparative tests found that the root of the medicinal herbs and bee sugar plum growth cycle to form a complementary, and its apoptosis can make the soil organic matter content increased by 28%, effectively inhibit the growth of weeds and improve the soil structure. What's more, the herb stems and leaves are made into feed additives after special treatment, increasing the comprehensive utilization rate of resources by 45%.

In order to extend the industrial chain, Baozhou District in Wujiang Town built a modern herbal processing center, equipped with microwave drying, low temperature extraction and other advanced equipment, developed six major products such as Chinese medicine tablets, essential oil extracts. Through the establishment of strategic cooperation with Guizhou Bailing Pharmaceuticals, Yishu Chain Pharmaceuticals and other enterprises, the products have entered more than 300 pharmacies in southwest China. The e-commerce operation team uses big data analysis to accurately locate consumer groups, and the "Qianbei Pharmaceutical Valley" brand store created on platforms such as Jitterbug and Pinduoduo has achieved a breakthrough in online sales with an average annual growth rate of 120%. In terms of scientific and technological support, the Baozhou Institute of Agricultural Science and Technology, in conjunction with Guizhou University, set up an expert workstation, carried out a total of 127 field trials, collected 560 soil samples, and cultivated a new disease-resistant variety of "Bao Li No. 1". The technical team's innovative "three-dimensional monitoring system" monitors soil moisture in real time through Internet of Things (IoT) equipment, increasing water and fertilizer utilization by 35%. The model has been successfully replicated in five counties and districts,

including Meitan and Suiyang, forming a special agricultural industrial belt covering northern Guizhou.

According to statistics, since the implementation of the project cumulative training of new vocational farmers more than 2,800 people, leading to more than 1,200 jobs, to help lift households out of poverty with an average annual income of 18,000 yuan. Broadcasting District Agriculture and Rural Affairs Bureau responsible person said, will deepen the "school-enterprise" tripartite cooperation mechanism, plans to build within three years of 10,000 acres level of Taoist medicinal herbs planting base, to create a set of eco-agriculture, science popularization and research, recreation and tourism in one of the countryside revitalization demonstration area.

4. PROBLEMS IN THE CHINESE HERBAL MEDICINE INDUSTRY OF APIS MELLIFERA SET PLANTING IN ZUNYI CITY'S BAOZHOU DISTRICT

4.1. Farmers' Capacity to Apply Technology Needs to Be Strengthened and Upgraded

In the practice of fruit-medicine compound planting in Podzhou District, there are limitations in farmers' cognition of the three-dimensional cultivation mode, and the level of field management needs to be improved. In Longping Township demonstration base research found that about 65% of the growers lacked scientific knowledge of the climatic match of the set crops, resulting in the existence of nutrient competition between Chinese herbs and bee sugar plums. Some farmers still use the traditional monoculture fertilization method, resulting in soil quick-acting nitrogen content exceeding the standard by 12%, affecting the accumulation of active ingredients in herbs. In view of the status quo, it is recommended to build a "three-level joint training" system: district-level agricultural experts monthly theoretical lectures, focusing on water and fertilizer coupling control, pest and disease prevention and control of green technology, etc.; town-level technicians organize weekly field practice, the establishment of dynamic monitoring files; village-level demonstration of the daily on-site guidance through the "hands-on" teaching to enhance the rate of technological transformation. At present, the town has built five training bases in Shangji, the cumulative training of new vocational farmers 680 people.

4.2. Market Channel Development and Brand Value Shaping

Specialty agricultural products in Baozhou District face the challenge of insufficient market recognition. The data show that the premium rate of Chinese herbal medicine primary processing products in the area is only 28%, lower than the average level of the province. It is recommended to implement the "two-wheel drive" strategy: on the one hand, establish a quality evaluation system for local herbs with Guizhou Medical University, obtain organic certification and geographical indication protection, so as to increase the product premium to 45%; on the other hand, build a regional communal brand of "broadcasting medicine and fruit", set up an experience store in Guiyang Longdongbao Airport, and develop 8 deep-processed products such as "medicinal food gift box" and "health preserved fruit". E-commerce operations, the use of VR technology to build a virtual planting base, in the Jingdong health platform to open the traceability of the live room, to realize the consumer "cloud supervisor". 2023 through the model contributed to the order amount exceeded 12 million yuan, the repurchase rate of 37%.

4.3. Improvement of the Policy Protection System and Financial Innovation

New business subjects face the pressure of pre-investment, research shows that the construction cost of each acre of planting garden sets up to 4800 yuan, the capital recovery cycle of up to 3 years.

Suggestions to build "financial + financial + insurance" synergistic mechanism: district financial annual arrangement of 8 million yuan of special funds, more than 50 acres of continuous planting of the main body of the operation to give 600 yuan per acre subsidies; Agricultural Bank of innovation "medicine fruit loan" products, the implementation of the LPR benchmark interest rate floated by 15% of the preferential policies; People's Insurance Co. to develop the characteristics of planting comprehensive insurance to cover the extreme weather and price fluctuations of double risk. At present, it has facilitated the broadcasting state investment and your silver fund cooperation to set up 200 million yuan of agricultural industry development fund, focusing on supporting the cold chain logistics facilities and the construction of digital agriculture projects.

4.4. Ecological Carrying Capacity Assessment and Green Technology Application

By building a three-dimensional monitoring network of "sky, earth and air", Baozhou District found that the diversity index of soil microbial community decreased by 9% due to continuous planting. Therefore, the agricultural team developed "three adjustments and three supplements" ecological conservation techniques: adjusting the planting structure, establishing a half-summer - yellow essence - honey plum rotation system; adjusting the fertilizer formula, adding 5% biochar improver; adjusting the irrigation mode, promoting trace irrigation technology. Measures such as compensation for the return of withered material to the field, compensation for the conservation of natural enemies and insects, and compensation for the restoration of inter-forest habitats were implemented simultaneously. Pilots in Duck Creek Township have shown that the technology has resulted in a 0.3% annual increase in soil organic matter, a 42% increase in water savings, and a 58% reduction in pesticide use. The ecological environment department is establishing a dynamic assessment model of the ecological carrying capacity of the set of parks to ensure that industrial development maintains a benign balance with the ecological red line.

4.5. Industrial Integration and Value Chain Extension

Podcasting area of Chinese herbal medicine deep processing link urgent breakthrough, the current industry chain end product to raw materials primary processing, deep processing conversion rate of less than 35%. In the Duck Creek Town Industrial Park research found that more than 90% of the herbs only after slicing, drying and other primary processing, failed to form high value-added products. To this end, the District Industry and Information Bureau of Guangzhou Pharmaceutical Group to implement the "three-chain enhancement" project: extend the processing chain, the first intelligent Chinese medicine extraction production line built in the town of ShangJi in Southwest China, the development of wall-breaking powder, nano essential oils and other 12 types of finishing products; strengthen the cold chain chain, equipped with -25 °C ultra-low-temperature freeze-drying equipment, so that the active ingredient retention of herbs up to 92%; build a chain of traceability, the use of block-chain technology to establish the "one thing, one code" Quality Tracing System. Through the synergy of the three chains, the value-added rate of Chinese herbal medicine processing in 2023 will increase from 1:1.8 to 1:4.2, leading to an average return of 12,000 yuan per mu.

4.6. Construction of Localized Technology R&D System

In view of the characteristics of karst landscape, Baozhou Institute of Agricultural Science set up a special research team, which took three years to develop the "five-dimensional planting model of land suitability". The system includes: ① slope adaptation system, the establishment of 200-800 meters altitude gradient planting map; ② micro-domain climate control technology, the use of windbreak nets + fog spray device combination, so that the frost loss rate decreased by 63%; ③ rocky desertification soil improvement program, by mixing 30% of the phosphorus gypsum amendment, the soil pH stabilized in the appropriate range of 6.2-6.8; ④ germplasm resource library construction, collection and preservation of local Taoist medicinal herbs seed source 47 categories; ⑤ intelligent

decision-making platform ⑤ Intelligent decision-making platform, integrating 12 climate monitoring sensors to realize precise regulation of water and fertilizer. The application of the demonstration base in Fengxiang Town showed that the polysaccharide content of yellow essence was increased by 28%, and the cracking rate of honeybush plum was controlled within 5%, and the technical achievements were awarded the Third Prize of Guizhou Scientific and Technological Progress for the year 2023.

4.7. Agricultural Cultural Heritage and Industrial Empowerment

Baozhou District has dug deep into the traditional wisdom of "rice-medicine crop rotation", and has included the planting pattern in the list of intangible cultural heritage protection. In Pingzheng Gelao Township, a farming culture experience park was built, restoring the planting scene of "forest and medicine symbiosis" in the Ming and Qing Dynasties, and developing cultural derivatives such as "twenty-four seasons of medicinal food". Innovative implementation of the "three pass project": skills inheritance, selection of 32 local experts to establish non-heritage workshops, compilation of the "broadcast state medicine fruit cultivation atlas"; cultural dissemination, to create a "medicine fruit field yard" scenic performance project, the annual reception of the study team of 23,000 times; value transfer, and Maotai Group launched the "health wine gift" set, integrated into the elements of traditional Chinese medicinal herbs to enhance the product's cultural connotations. Statistics show that the cultural empowerment of the product premium space expanded by 41%, driving the development of the surrounding six villages featured 57 lodging, forming a "agriculture, culture and tourism" integration and development of a new industry pattern.

5. COUNTERMEASURES AND SUGGESTIONS FOR CHINESE HERBAL MEDICINE INDUSTRY OF SUGAR PLUM SET IN ZUNYI CITY'S BANZHOU DISTRICT

5.1. Technology Promotion System for Industry-Education Integration

Baozhou District integration of agricultural resources in the province, Guizhou Agricultural Vocational College, the Provincial Institute of Traditional Chinese Medicinal Herbs to form a "mountain characteristics of the Agricultural Technology Promotion Center". Focus on the implementation of three major infrastructure projects: ① simple drip irrigation system transformation, the use of existing water conservancy facilities retrofitted with intelligent controllers, to achieve water savings of 30% per acre; ② soil testing and formula fertilization popularization action, relying on the township agricultural station to establish a soil database, the development of 8 types of fertilizer program; ③ pest prevention and control network, the formation of 28 village-level plant protection team, equipped with 200 sets of electric sprayers. In Duck Creek Township, we built a 500-acre demonstration garden, compiled the "Li medicine planting manual", and trained 430 technical backbones. Simultaneously carry out the "school-land twinning" program, organize Guizhou Normal University and other universities teachers and students to carry out summer practice, the establishment of 12 village-level science and technology service points.

5.2. Innovations in Terraced Ecological Planting Patterns

According to the characteristics of the mountainous areas in northern Guizhou, the "three-step, four-crop" planting system has been implemented:

Upper terraces (above 800 meters above sea level): planting cold-resistant variety "Qian Li No. 1" set of asparagus, and utilizing fallen leaves to cover and retain moisture

Middle terraces (600-800 m): main planting of plums with yellow essence, intercropping with green manure crops to feed the land.

Lower terraces (below 600 meters): develop early-maturing plum varieties planted with half-summer, supporting the construction of rain-collecting cellars

Implementation of the "four seasons of crop rotation": spring harvest of tianma, summer harvest of plum, fall digging yellow essence, winter land nursery. In the town of Shangjian pilot show, the model makes the mu average income of 8500 yuan, compared with the traditional planting income 2.3 times. Supporting the construction of 43 small compost heaps, straw, medicine residue and other waste resource utilization.

5.3. Characteristic Industry Chain Cultivation Project

Phased promotion of industrial upgrading:

Initial stage (1-2 years): Rebuild and expand three town-level processing plants, add new basic equipment such as washing and sorting, and develop six primary commodities such as dried plums and medicinal packages. Declare the geographical indication of "Baozhou honey plum" and set up a special counter at Guiyang Airport.

Medium-term (3-5 years): Introducing the Guangzhou Pharmaceutical Group to build an extraction workshop and develop deep-processed products such as Chinese medicine tablets and fruit wines. Build 2 cold chain storage centers and add 2,000 tons of pre-cooled storage capacity.

In the long term (more than 5 years): to build a "100-mile medicine and fruit corridor" agro-tourism integration belt, and to construct 10 sightseeing and picking gardens and 3 B&B clusters.

5.4. Supporting Measures

Financial support: coordinating with the Agricultural Credit Union to launch the "Li Medicine Loan", with a preferential interest rate of 1.5 percentage points.

Branding: opening a special page on the "One Code Tour Guizhou" platform and organizing the "Plum Blossom Festival" and the "Medicine Picking Festival".

Cultivation of talents: Specialized classes on Chinese herbal medicine cultivation have been opened in district vocational schools, and 300 skilled farmers are trained every year.

6. CONCLUSION

Zunyi City, broadcasting district innovation to explore the "bee sugar plum + Chinese herbs" three-dimensional set of planting mode, in the continuation of the mountain agricultural tradition on the basis of building a new industrial pattern, through the ecological planting system to achieve industrial efficiency and farmers to increase income win-win situation. The planting model has the double value of both cash crop output and cultivation of local medicinal herbs, forming a three-dimensional agricultural landscape of "fruit on the tree and gold under the forest", and effectively enhancing the comprehensive utilization rate of land. At this stage, the lagging transportation and logistics facilities, the lack of digital marketing channels and the lack of composite agronomic talents have constrained the industrial scale and standardized development process.

Based on the unique karst geomorphological features and multi-ethnic cultural deposits in the district, it is recommended to implement the development strategy of "three-chain integration": firstly, extend the planting industry chain, and build a modern agricultural base including a smart farmland management system and an air-conditioned freshness preservation and storage center; secondly, activate the cultural value chain, and rely on the non-legacy techniques of Miao medicine to build an

agricultural, cultural, tourism and recreational complex that combines the exposition of Chinese medicinal herbs, recreational and health care experience, and the demonstration of folklore; and thirdly Expand the ecological value chain, the development of "forest trails + medicinal food lodging + study base" ecotourism loop. Through the implementation of the "five reform projects" (soil reform, water reform, road reform, technology reform and marketing reform), supporting the construction of the traceability system of agricultural products and the e-commerce live center, cultivating the talent matrix of "rural artisans, agricultural experts and e-commerce experts", forming the full-factor industrial ecology of "ecological planting, deep processing, brand marketing and cultural tourism derivation", building a model area of modern agricultural development with the characteristics of the mountainous region of northern Guizhou, and realizing ecological protection, The positive interaction between ecological protection, cultural inheritance and industrial upgrading will be realized.

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