

From Resource Endowment to Industrial Highland: The Pathway and Strategies for Kunming to Build the “Oriental Grasse” Fragrance Industry*

TANG Jiazhi

Zhaotong Qihuang Traditional Chinese Medicine Technology Co., Ltd., Zhaotong, China

PENG Zihao

Yunnan Museum of Aromatics & Incense Culture, Kunming, China

HUANG Yun

Senior Engineer, China

This study adopts an interdisciplinary perspective integrating industrial economics, regional economics, and cultural geography to systematically explore the upgrading pathway for Kunming’s fragrance industry, aiming to benchmark against Grasse, France, and achieve the strategic goal of becoming the “Oriental Grasse”. The research follows a logical framework of “resource endowment analysis—pain point diagnosis—paradigm benchmarking—pathway construction”, employing a comprehensive methodology of literature review, field research, and case analysis. The findings reveal that despite possessing significant biological resource endowments and an industrial foundation, Kunming’s fragrance industry faces core constraints including a low-end industrial chain structure, weak brand influence, insufficient technological support, a shortage of professional talent, and low industrial integration. Through an in-depth analysis of the successful paradigm of the Grasse fragrance industry cluster, the study distills its core experiences: synergistic development of the entire industrial chain, deep integration of technology and culture, tight coupling of cultural tourism with the industry, and international brand operation. Based on this analysis, the study proposes a systematic set of industrial upgrading strategies from five dimensions: constructing a comprehensive industrial chain system, deepening the integration of cultural tourism and wellness, strengthening technological support and innovation, innovating talent cultivation mechanisms, and building a regional public brand. This research aims to provide theoretical reference and practical solutions for Kunming to transition from resource export to brand creation, and from industrial agglomeration to a high-value industrial highland.

Keywords: Oriental Grasse, fragrance industry, entire industrial chain, cultural and tourism integration, technology empowerment, brand internationalization, Kunming

* **Acknowledgements:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

AI Assistance Statement: The authors utilized the DeepSeek-AI/DeepSeek-V3.1-Terminus model for language enhancement purposes during manuscript revision. All ideas, analyses, and conclusions remain the sole responsibility of the authors.

TANG Jiazhi, Bachelor, Legal Representative, Chairman & General manager, Zhaotong Qihuang Traditional Chinese Medicine Technology Co., Ltd., Zhaotong, China.

PENG Zihao, Bachelor, Assistant, Yunnan Museum of Aromatics & Incense Culture, Kunming, China.

HUANG Yun (corresponding author), Senior Engineer, China.

Introduction

The fragrance industry, as a distinctive sector connecting ecological resources, economic production, and cultural heritage, plays a significant role in rural revitalization and regional development. Grasse, France, leveraging its unique climate, mature industrial cluster, and profound perfume culture, has become a global exemplar of value upgrading for characteristic industries. Kunming City, situated on the Yunnan-Guizhou Plateau, boasts exceptionally rich biodiversity and is a core distribution area for China's natural fragrance resources. It is home to over 400 species of aromatic plants, with products like geranium oil and citronella oil holding significant shares in the global market (Yunnan Provincial Bureau of Forestry and Grassland, 2022). In 2025, Kunming officially proposed the strategic goal of building the "Oriental Grasse", marking the entry of its fragrance industry into a new stage oriented towards branding and high-value development. Although Kunming's fragrance industry has reached a certain scale with considerable annual output value and employment generation, significant gaps remain compared to Grasse's mature industrial system, particularly in terms of industrial chain completeness, brand influence, technological content, and degree of industrial integration.

Existing research has explored the Grasse industrial cluster (Atkins, 2019; Martin, 2020) and the macro development of China's fragrance industry (Zhao & Li, 2022). However, systematic studies focusing on how Kunming's fragrance industry can benchmark against international standards and achieve comprehensive upgrading are still insufficient. This study aims to fill this gap by conducting an in-depth analysis of the resource base and practical constraints of Kunming's fragrance industry, drawing on Grasse's successful experiences, to construct a multi-dimensional industrial upgrading framework, thereby providing a scientific and feasible strategic system for Kunming to build the "Oriental Grasse".

This study follows the logical sequence of "resource endowment analysis—pain point diagnosis—paradigm benchmarking—pathway construction". First, it clarifies the resource inventory and development status of Kunming's fragrance industry through literature analysis and field research. Second, it systematically diagnoses the key bottlenecks in its development. Third, it delves into the core characteristics and success factors of Grasse's industrial development. Finally, based on the above analyses, it proposes systematic strategies for the leapfrog development of Kunming's fragrance industry.

Resource Endowment and Development Foundation of Kunming's Fragrance Industry

Biological Resource Endowment: The "Gene Pool" of Natural Fragrances

Kunming's unique geographical location gives rise to diverse low-latitude plateau climates, providing ideal conditions for the growth of various aromatic plants. This land can be termed the "gene pool" of China's aromatic plants, hosting hundreds of characteristic resources such as Yunnan camphor, star anise, lemongrass, and Dianjiang flower (Chen, 2019). Among these, the production of geranium oil and citronella oil accounts for 30% and 40% of the global market share, respectively, establishing Kunming's important position in the global supply of fragrance raw materials (Kunming Municipal Bureau of Agriculture and Rural Affairs, 2025). In 2024, the total output value of Kunming's fragrance industry reached 4.8 billion yuan, with products exported to over 20 countries and regions worldwide, demonstrating a solid foundation in industrial scale (Kunming Municipal Bureau of Statistics, 2025).

Industrial Layout Foundation: The Embryonic Form of an Entire Industrial Chain

After years of development, Kunming's fragrance industry has initially established an industrial chain covering cultivation, processing, and trade. In the cultivation segment, a preliminary regional layout has formed

with counties like Jiangchuan, Tonghai, and Huaning as the core, with a cultivation area of 114,500 mu and a comprehensive output value of 2.29 billion yuan, effectively increasing local farmers' income (China Fragrance Flavor and Cosmetic Industries Association, 2024). In the processing segment, local enterprises can now produce primary products like fragrances and essential oils, achieving a shift from mere raw material export to preliminary processing. In the trade segment, leveraging its status as a southwestern commercial hub, Kunming is gradually developing into a significant distribution center for fragrance products in China, laying the groundwork for industry internationalization.

Cultural and Policy Support: Dual Empowerment for Industrial Development

Profound ethnic cultural heritage endows Kunming's fragrance industry with unique cultural connotations. Local ethnic minorities have developed a rich culture of fragrance application through long-term practice. At the policy level, both Yunnan Province and Kunming City have incorporated the fragrance industry into the "Green Food Brand" and key rural revitalization industries for support. Specialized strategic research has been initiated, and the fragrance industrial park under construction has begun to show agglomeration effects (Kunming Municipal People's Government, 2024), providing clear policy direction and spatial carriers for industrial upgrading.

Real Bottlenecks and Constraining Factors in the Development of Kunming's Fragrance Industry

Despite a solid foundation, Kunming's fragrance industry still faces multiple developmental constraints:

1. Low industrial structure level, shortcomings in the industrial chain: The cultivation segment is dominated by smallholder farmers (over 80%), with low standardization and insufficient stability in raw material quality (Liu & Yang, 2023). The processing segment focuses on primary products, with deep processing accounting for less than 20% of output value, resulting in low added value. This stands in stark contrast to Grasse, where the processing segment contributes over 80% of the value (French Perfume Culture Research Group, 2018). The trade segment heavily relies on raw material exports, lacking proprietary brands and international marketing networks.

2. Weak brand influence, insufficient market competitiveness: The industry as a whole lacks a regional public brand with global influence like "Grasse". Enterprise brands are small and scattered, products suffer from homogeneity, and packaging and marketing fail to effectively convey regional cultural characteristics, leading to low market recognition and difficulty entering the international high-end market (Chen & Zhou, 2022).

3. Insufficient technological support, urgent need to enhance innovation capability: The industry faces challenges such as a lack of core extraction, synthesis, and blending technologies, with high-end products depending on imports. The connection between industry, academia, and research is not tight, resulting in low conversion rates for scientific research achievements, and enterprises generally underinvest in R&D (Wang & Zhang, 2021). There is a lack of comprehensive national or provincial-level public platforms for R&D and testing.

4. Shortage of professional talent, insufficient innovation capacity: The industry suffers from a severe shortage of urgently needed talents such as perfumers, fragrance engineers, and versatile management and marketing professionals. The local higher education system has not yet established relevant fragrance majors, creating a talent cultivation gap. Furthermore, existing high-end talent faces the risk of outflow.

5. Insufficient industrial integration, singular business models: The integration of the fragrance industry with cultural tourism and health wellness industries remains superficial. There is a lack of deep cultural experience carriers like the Grasse Perfume Museum or perfume blending workshops (J. Chen & F. Chen, 2021), and the application value of fragrances in areas like aromatherapy and wellness has not been fully developed (Zhang, 2021), limiting the extension of industrial value.

Experience and Lessons From the Development of the Grasse Fragrance Industry in France

The success of Grasse, France, is not accidental. Its core experience lies in constructing a highly synergistic, value-multiplying industrial ecosystem:

1. Synergistic development of the entire industrial chain: A complete closed-loop has been formed, encompassing fragrance cultivation, perfume R&D, luxury brand manufacturing, global marketing, and cultural tourism experiences. All segments interact closely to jointly enhance overall value (Martin, 2020).

2. Deep integration of technology and culture: On one hand, it collaborates with top-tier scientific research institutions to continuously optimize cultivation and extraction technologies. On the other hand, it deeply integrates centuries of perfume art and culture into brand narratives and product design, achieving a unity of functionality and artistry.

4. Deep binding of cultural tourism and industry: By constructing perfume museums, opening legendary perfume workshops, and hosting international perfume festivals, Grasse has transformed a production site into a tourist destination and cultural pilgrimage site, realizing a virtuous cycle of “promoting industry through tourism and promoting tourism through industry” (Atkins, 2019).

4. International brand layout: It has not only nurtured numerous globally top-tier perfume brands but also gained worldwide fame itself as a raw material origin and source of inspiration, firmly occupying the high-value end of the global perfume industry chain.

Grasse’s practice enlightens Kunming that building the “Oriental Grasse” must transcend the singular mindset of raw material production or processing and manufacturing. Instead, it should shift towards constructing a modern industrial system driven by technological innovation, empowered by culture as its soul, characterized by tertiary industry integration as its form, and led by brand building.

Strategic Suggestions for Kunming to Build the “Oriental Grasse” Fragrance Industry Highland

Based on resource endowment, problem diagnosis, and paradigm learning, this study proposes the following systematic strategies:

1. Construct a comprehensive industrial chain development system to consolidate the industrial foundation:
 - Optimize the cultivation segment: Formulate specialized plans to promote cultivation agglomeration towards “one core, two belts, three parks”. Promote the “enterprise + cooperative + farmer” model, establish standardized cultivation bases, and strengthen improved variety selection and standardized management to enhance raw material quality and stability from the source.
 - Upgrade the processing segment: Plan and construct high-standard fragrance deep-processing industrial parks, focusing on attracting and cultivating enterprises in high-end perfumes, natural fragrances, and functional fragrance products. Establish an industrial upgrading fund to support enterprise technological transformation and new product R&D, striving to increase the proportion of deep-processed products to over 50% by 2027.

- Expand the trade segment: Build an international fragrance trading center and digital trading platform oriented towards South and Southeast Asia. Actively cultivate local comprehensive foreign trade service enterprises, supporting them in building proprietary international marketing channels. Organize the “International Fragrance Culture Festival” and the “Oriental Grasse Forum” to enhance the industry’s international discourse power.

2. Deepen cultural integration, and create new formats in cultural tourism and wellness:

- Build a fragrance cultural tourism system: Plan and construct an “Oriental Grasse Perfume Culture Experience Park” integrating cultivation sightseeing, cultural display, manual perfume blending, and creative workshops. Design premium “Kunming Fragrance Tour” routes, connecting plantations, processing factories, cultural venues, and characteristic villages.

- Develop new aromatherapy and wellness formats: Promote the integration of the fragrance industry with traditional Chinese medicine and the big health industry, developing Kunming-characteristic aromatherapy products and services. Construct “Aromatherapy Theme B&Bs” and “Wellness Aromatherapy Manors” in major tourist areas and wellness destinations, providing immersive health experiences.

3. Strengthen technological support, and build a “Technology-Empowered Innovation Center”:

- Establish industry-academia-research collaboration platforms: Jointly establish the “Kunming Fragrance Industry Research Institute” in collaboration with universities, research institutions, and leading enterprises both inside and outside the province. Focus on tackling green and efficient technologies such as supercritical CO₂ extraction and bio-enzymatic hydrolysis (Y. Chen & F. Chen, 2020), and establish a “Characteristic Aromatic Plant Resource Database” and efficacy evaluation system.

- Break through core technological bottlenecks: Establish municipal-level science and technology special projects for the fragrance industry, encouraging enterprises to achieve breakthroughs in key technologies such as natural fragrance separation and purification, aroma component recombination, and controlled release. Aim to build an industrial technology innovation center by 2026, forming a batch of high-value-added patented products.

4. Innovate talent cultivation, and construct a multi-level talent system:

- Balance introduction and cultivation: Formulate specialized policies to vigorously introduce top international perfumers, R&D experts, and brand management talents. Promote local universities (e.g., Kunming University of Science and Technology, Yunnan Agricultural University) to add relevant majors and courses such as fragrance science and engineering, perfume and fragrance technology, and establish industrial talent cultivation bases.

- Improve incentive mechanisms: Establish a talent evaluation and incentive system oriented towards innovative value, capability, and contribution. Set up a talent development fund to foster an industrial atmosphere that respects talent and encourages innovation.

5. Cultivate leading brands, and build the “Kunming Fragrance Charm” regional public brand:

- Implement a brand strategy: Jointly create the “Kunming Fragrance Charm” regional public brand led by the government, operated by associations, and with enterprise participation. Formulate strict entry standards and a quality traceability system.

- Cultivate leading enterprises: Through policy support and market mechanisms, cultivate 1-2 locally rooted fragrance leading enterprises with national or even international influence, leveraging their demonstration and driving effects.

- Promote brand internationalization: Deeply explore the connotations of Yunnan's ethnic culture and ecological culture, integrating them into brand stories and product design. Actively utilize international exhibitions, cross-border e-commerce, and social media for global brand communication, promoting "Kunming Fragrance Charm" to join the ranks of global high-end fragrance brands (Yunnan Provincial People's Government, 2023).

Conclusion

Building the "Oriental Grasse" in Kunming is a systematic project. It requires a full recognition of its robust resource endowment and broad market prospects, while squarely facing the practical shortcomings in its industrial chain, brand, technology, talent, and integrated formats. The successful paradigm of Grasse, France, provides valuable insights, but its experience must be integrated with Kunming's local characteristics. In the future, Kunming should adhere to technological innovation as the core, cultural empowerment as the feature, tertiary industry integration as the pathway, and brand building as the guide. Through strategies such as constructing a synergistic ecosystem for the entire industrial chain, deepening the integration of cultural tourism and wellness, strengthening technological and talent support, and building an excellent regional brand, it should systematically promote the fragrance industry's leap from resource-dependent to innovation-driven, and from the low end to the high end of the value chain. This will not only help establish Kunming as a veritable world-class fragrance industry highland but also provide a "Kunming Sample" for the high-quality integrated development of characteristic agriculture and cultural industries in China.

References

- Atkins, P. (2019). The perfume industry of Grasse: A model of regional specialization and cultural economy. *Journal of Cultural Geography*, 36(2), 187-205.
- Chen, J. (2019). *Theories and practices of characteristic biological resource industrial cluster development*. Kunming: Yunnan Science and Technology Press.
- Chen, J., & Chen, F. (2021). Research on the development model of characteristic industry towns from the perspective of cultural and tourism integration: A case study of Grasse, France. *World Regional Studies*, 30(4), 789-797.
- Chen, L., & Zhou, W. (2022). Regional brand cultivation and international promotion from the perspective of industrial clusters. *Commercial Economics Research*, 42(12), 123-125.
- Chen, Y., & Chen, F. (2020). Application of supercritical CO₂ extraction technology in natural spice processing. *Modern Chemical Industry*, 40(8), 189-192.
- China Fragrance Flavor and Cosmetic Industries Association. (2024). *White paper on the development of China's natural spice industry (2024)*.
- Dupuis, M. F. (2021). Innovation and sustainable development in the French aromatic and perfume industry. *Sustainable Production and Consumption*, 27, 1563-1574.
- French Perfume Culture Research Group. (2018). *Enlightenment from the industrial development of Grasse, the perfume capital of the world*. Shanghai: Shanghai People's Publishing House.
- Kunming Municipal Bureau of Agriculture and Rural Affairs. (2025). *Research report on the high-quality development strategy of Kunming spice industry*.
- Kunming Municipal People's Government. (2024). *Kunming rural revitalization key industry development plan (2024-2028)*.
- Kunming Municipal Bureau of Statistics. (2025). *2024 Kunming agricultural industry development statistical annual report*.
- Lin, X. (2020). *Processing technology of natural spices*. Beijing: China Light Industry Press.
- Liu, M., & Yang, X. (2023). Analysis on the path of improving quality and efficiency of Yunnan characteristic planting industry under the background of rural revitalization. *Agricultural Economy*, 45(5), 45-47.
- Martin, J. P. (2020). Industrial clustering and global competitiveness: The case of Grasse perfume cluster. *European Planning Studies*, 28(9), 1721-1738.

- Wang, J., & Zhang, Y. (2021). Research on the strategy of constructing the whole industry chain of Yunnan biological resource industry. *Yunnan Social Sciences*, 41(3), 112-118.
- Yunnan Provincial Bureau of Forestry and Grassland. (2022). *Yunnan provincial characteristic economic forest industry development plan (2022-2030)*.
- Yunnan Provincial People's Government. (2023). *Yunnan Province three-year action plan for building a world-class "Green Food Brand" (2023-2025)*.
- Yunnan Provincial Bureau of Statistics. (2025). *2024 Yunnan Province national economic and social development statistical bulletin*.
- Zhang, L. (2021). *Research on theories and paths of cultural and tourism integrated industry development*. Beijing: Tourism Education Press.
- Zhao, J., & Li, Y. (2022). Development status and transformation and upgrading path of my country's natural spice industry. *Science and Technology of Food Industry*, 43(15), 397-404.