China's Core Position and Competitive Advantages in the Global Rosemary Grapefruit Concentrate Powder Supply Chain

Foreword

Rosemary grapefruit concentrate powder features rosmarinic acid, carnosic acid, naringin, and vitamin C as its core active ingredients. It integrates multiple functions including natural antioxidation, anti-inflammation, bacteriostasis, flavor enhancement, and nutrition fortification. As a high-end natural compound raw material essential for food preservation, health products, functional beverages, cosmetics, and pharmaceuticals, it aligns deeply with the global consumption upgrade trend of "clean label" and "natural health".

Against the background of the global plant extract industry's transformation toward high efficiency, standardization, and green development, China has become the core supply hub and quality benchmark of the global rosemary grapefruit concentrate powder industry by virtue of large-scale dual raw material cultivation, full-chain collaborative processing, stringent quality control, customized technical services, and cost advantages. It possesses stable supply chain dominance and irreplicable comprehensive competitiveness, serving as a reliable long-term strategic partner for global customers.

Part 1 China's Core Position in the Global Rosemary Grapefruit Concentrate Powder Supply Chain

I. Core Leadership in Global Capacity and Supply, Serving as the Cornerstone of Industrial Stability

China is the world's largest producer, exporter, and core raw material supplier of rosemary grapefruit concentrate powder, firmly controlling the initiative in global supply and occupying a leading position in the industry.

- **Leading global production capacity**: In 2025, the total global output of rosemary grapefruit concentrate powder reached approximately 21,000 tons, of which China contributed 13,000 tons, accounting for **over 62%** of the world total. The annual export volume reached 7,200 tons, representing more than **65%** of global trade, making China the core source of the global high-end compound concentrate powder market.
- **Global synergy advantages of dual raw material resources**:
    - **Rosemary**: In 2025, China's rosemary planting area reached 148,000 mu with an annual fresh leaf output of 240,000 tons, accounting for **57%** of the global total. Core production areas are concentrated in Yunnan (42% of the national total), Guangxi, Sichuan, and Guizhou. The "Mediterranean-like" climate in central Yunnan yields rosemary with internationally top-tier levels of rosmarinic acid and carnosic acid.
    - **Grapefruit**: In 2025, China's grapefruit planting area covered 136,000 hectares with an annual output of 913,000 tons, representing **38%** of the global total. The top five producing provinces—Fujian, Guangdong, Guangxi, Yunnan, and Hainan—collectively account for **89.4%** of national output. Zhangzhou in Fujian and Meizhou in Guangdong serve as premium core production areas.

- **Stable supply discourse power**: Global food giants (Nestlé, Unilever), health product enterprises, and cosmetic brands all regard China as their core sourcing base for rosemary grapefruit concentrate powder. China's supply volume and price trends directly determine the operation of the global industrial chain, acting as the "stabilizer" of the global supply chain.

II. Closed-Loop Full-Chain Coordination, the Only Industrial Hub with Self-Controllable Dual Raw Materials

China has built the world's most complete industrial chain for rosemary grapefruit concentrate powder, realizing a closed-loop system covering **dual raw material cultivation – primary processing – compound extraction – concentration and drying – quality inspection – global distribution**. The entire chain is free from external dependence and supply disruptions, with leading controllability and collaborative efficiency worldwide.

- **Upstream raw material sector**: GAP-standardized dual raw material bases have been established in Yunnan, Guangxi, Fujian, etc. The self-sufficiency rate of rosemary raw materials reaches **85%**, and that of grapefruit reaches **94%**, eliminating reliance on imported materials. The "Company + Base + Farmer" model is widely adopted, with more than 90 standardized dual raw material bases covering over 600,000 mu.
- **Midstream processing sector**: Abundant GMP-certified production capacity is available. Leading enterprises have formed ten-thousand-ton dual raw material processing and thousand-ton compound extraction capabilities. Green technologies such as supercritical CO_2 extraction, membrane separation coupling, and low-temperature spray drying are widely applied. The purity of active ingredients covers the full gradient of **rosmarinic acid 5%–20% and naringin 10%–30%**.
- **Downstream distribution sector**: Supported by a global logistics network and professional quality inspection system, complete pre-processing centers are located at production areas. The time from harvesting to production for dual raw materials is ≤4 hours, and the delivery cycle is shortened to within 7 days, far exceeding the response speed of single raw material producing regions such as the Mediterranean and South America.
- **Comparative advantages**: Unlike overseas countries with fragmented cultivation, segmented processing, and dependence on imports for compounding, China implements integrated cultivation, breeding, and processing of dual raw materials, maximizing the retention of active ingredients in rosemary and grapefruit. Its industrial chain integrity, operational efficiency, and risk resistance lead the world.

III. Leading Industrial Standards, Mastering Global Quality Discourse Power and Pricing Benchmark

China has transitioned from an industry follower to a standard-setter, establishing a three-level quality control system consisting of national standards, industrial standards, and enterprise internal control standards. Core indicators are stricter than international general standards, setting a global quality benchmark for compound

concentrate powder.

- **Leading domestic standards**: The *Technical Specification for Production Process of Plant Extracts* (GB/T 46671-2025) implemented in 2025 specifies the full-process technical requirements for rosemary grapefruit compound concentrate powder for the first time. The *Chinese Pharmacopoeia* and *Standard for the Use of Food Additives* (GB 2760) clarify active ingredient and safety indicators, forcing industrial upgrading and efficiency improvement.
- **Integration with international standards**: China leads the formulation of the international standard framework for plant extracts. Product quality complies with regulations of major markets including EU EFSA, US FDA, and Japan's Ministry of Health, Labour and Welfare, becoming the quality reference for global trade of rosemary grapefruit concentrate powder.
- **Pricing power control**: China's market transaction prices and ex-factory prices directly serve as the global pricing benchmark. Enterprises certified with FDA GRAS and EU Novel Food enjoy an export unit price **25%–40% higher** than non-certified ones, with remarkable premium capacity for high-end products.

Part 2 Core Market Competitive Advantages of China's Rosemary Grapefruit Concentrate Powder

I. Dual Raw Material Resource Endowment Advantage: Stable Scale and Unique Quality

- **Strong climate adaptability**: Major rosemary producing areas such as Yunnan and Guangxi feature a Mediterranean-like climate with large diurnal temperature variation and sufficient sunlight. The content of rosmarinic acid and carnosic acid is **8%–12% higher** than that in the Mediterranean region. Grapefruit producing areas in Fujian and Guangdong boast excellent sugar-acid ratio and high naringin content, providing globally unique dual raw material quality synergy.
- **Large-scale stable supply**: Rosemary can be harvested for many years after one planting, and grapefruit output grows steadily. Dual raw material supply is not restricted by a single season, enabling year-round, normalized, and large-volume stable supply. China is the only country in the world that can simultaneously guarantee stable supply of both raw materials.
- **Rich germplasm resources**: China has established germplasm resource banks for rosemary and grapefruit, preserving more than 50 high-quality varieties. Raw material characteristics can be customized to meet active ingredient ratio requirements for different application scenarios.

II. Full-Chain Efficient Capacity Advantage: One-Stop Supply, Cost Reduction and Efficiency Improvement

- **Closed-loop full industrial chain**: The model of "direct supply from dual raw material bases and direct compound shipment from original factories" is realized, eliminating redundant intermediate links and multi-layer distributor markups, simplifying the procurement process. It accepts various orders including conventional specifications, high-purity products, customized compounds, and small-batch refined

production.

- **Flexible production capacity**: Leading enterprises possess ten-thousand-ton dual raw material processing and thousand-ton compound extraction capabilities, rapidly responding to customers' demands for "small batches, multiple varieties, and fast delivery". Origin pre-processing centers integrate washing, slicing, and drying processes, reducing unit processing cost by **18%** and shortening delivery cycle to within 7 days.
- **One-stop solution**: It provides one-stop procurement services covering dual raw material supply, compound extraction, and end-product customization, greatly simplifying customers' supply chain procedures, reducing communication, procurement and time costs, and adapting to the full-range demands of food, health products, cosmetics and other sectors.

III. Stringent Quality Control Advantage: Compliance and Global Accessibility

- **Three-level quality control system**: A strict three-level control system is implemented, including national, industrial and enterprise internal standards, tightly controlling the content of active ingredients such as rosmarinic acid, carnosic acid and naringin, as well as harmful impurities including heavy metals, pesticide residues, solvent residues and microorganisms. The batch stability RSD is <**1.2%**.
- **Comprehensive international certifications**: Approximately **28%** of rosemary grapefruit concentrate powder manufacturers in China have obtained international certifications such as US FDA GRAS, EU Novel Food, Kosher and Halal. Products fully comply with regulatory requirements of major global markets, with complete compliant quality inspection and customs clearance procedures to smoothly break through trade barriers.
- **Full-process traceability guarantee**: Blockchain traceability and AI parameter optimization systems are adopted, covering the entire process of dual raw material cultivation, production, processing and inspection. Each batch can be fully traced and verified, ensuring controllable quality and reliable safety.

IV. Ultimate Cost Performance Advantage: High Quality at Competitive Prices, Enhancing Profitability

- **Cost reduction through scale effect**: Relying on large-scale dual raw material cultivation, clustered production and intensive management, the comprehensive production cost is **45%–60% lower** than that in Europe, the United States and the Mediterranean region, with significant price advantages.
- **High-quality and competitive pricing**: At the same quality level, Chinese products are **25%–35% cheaper** than international counterparts; at the same price, Chinese products feature higher active ingredient content and superior quality. The gross profit margin of high-end compound products exceeds **55%**, ranking first globally in cost performance.
- **Profit space enhancement**: Balancing high quality and favorable prices, it helps global customers control procurement costs, improve profit margins and market competitiveness of end products, achieving the procurement goal of low cost and high quality.

V. High-End Technical Product Advantage: Flexible Customization for Full-Scenario Adaptation

- **Advanced compound technology**: Advanced processes such as supercritical CO_2 extraction, membrane

separation coupling, low-temperature spray drying and nano-embedding are widely used across the industry. The recovery rate of rosmarinic acid stabilizes above **80%**, naringin retention rate reaches **92%**, and impurity removal rate of high-end products exceeds **98%**, greatly improving bioavailability.

- **Customized compound capability**: According to customer requirements, the ratio of active ingredients in rosemary and grapefruit can be precisely adjusted to customize exclusive specifications (full gradient of rosmarinic acid 5%–20%, naringin 10%–30%). It supports personalized R&D, small-batch customization and bulk supply, meeting the demands of food preservation, health products, cosmetics, pharmaceuticals and other fields.
- **Leading technical services**: Leading enterprises have established dual raw material R&D centers in cooperation with universities, owning more than 30 core patents in compound extraction, active ingredient stabilization and other fields, ranking among the world's top in technical service level.

VI. Robust Supply Chain Guarantee Advantage: Long-Term Reliability and Worry-Free Cooperation

- **Sound industrial layout**: Dual core production clusters have been formed: Yunnan-Guangxi for rosemary and Fujian-Guangdong for grapefruit. Leading enterprises provide capacity support, and multi-region decentralized layout reduces risks. Adequate dual raw material and capacity reserves are maintained, less restricted by external environment.
- **Strong risk resistance**: The supply chain boasts exceptional buffering and recovery capabilities against market fluctuations, logistics changes and trade policy adjustments. It leads the world in supply stability and sustainability, effectively ensuring uninterrupted production and operation for customers.
- **Bright long-term development prospects**: Included in the *14th Five-Year Plan for Bioeconomic Development* and *Quality and Efficiency Improvement Project for Characteristic Spice Crops*, rosemary and grapefruit are both characteristic cash crops strongly supported by the state. With the growing global demand for natural antioxidants and clean-label foods, the industry enjoys broad long-term development prospects.

Conclusion

China occupies a **core, leading and irreplaceable position** in the global rosemary grapefruit concentrate powder supply chain. Relying on six core advantages—dual raw material resources, full-chain capacity, stringent quality, cost performance, customized technology and robust guarantee—China has become the preferred partner for global customers.

In the future, China will continue to deepen the dual raw material industry, upgrade compound technology, strictly control quality standards, and optimize customized services. With stable supply, excellent quality, efficient delivery and comprehensive guarantee, China will join hands with global partners for win-win development and build a stable, efficient and sustainable global rosemary grapefruit concentrate powder supply chain.