Competitive Advantages of Garlic Extract Products and Future Market Development Prospects

As a traditional edible and medicinal homologous ingredient in China, garlic extract features allicin, alliin and other core active components, and is widely used in nutrition and health care, pharmaceuticals, daily chemicals, agriculture and other fields. Driven by the upgrading of natural and healthy consumption, technological iteration and policy support, its market scale has been expanding continuously. This paper systematically analyzes the core competitive advantages of garlic extract, forecasts its future development directions based on the industry status quo, provides professional references for industry partners and investors, and helps seize market opportunities.

I. Core Competitive Advantages of Garlic Extract Products

Garlic extract has formed differentiated and sustainable competitive advantages relying on its natural properties, technical barriers, complete industrial chain and diversified application scenarios, distinguishing it from chemical synthetic substitutes and other plant extracts. The core highlights are reflected in four dimensions.

(1) Outstanding Natural Properties Aligning with Mainstream Healthy Consumption

At present, "natural, safe and green" has become the core demand of consumers. Garlic extract is derived from garlic bulbs and extracted through mild processes, which completely retains natural active ingredients without artificial additives. It deeply conforms to China's concept of edible and medicinal homology and the global consumption trend of natural ingredients. By 2026, the national planting area of organically and green-certified garlic reached **1.286 million mu**, accounting for **22.3%** of the total planting area, providing a solid raw material guarantee for product quality.

Compared with chemical synthetic products, garlic extract has mild side effects, strong compatibility and long-term safety, making it suitable for high-end scenarios such as health products, infant food and high-end daily chemicals. Verified by more than 50 randomized controlled trials, its components such as allicin and alliin have clear effects of antibacterial and anti-inflammation, blood lipid regulation and immune enhancement. The dual advantages of "natural properties + scientific efficacy" effectively avoid homogeneous competition and build a solid market barrier.

(2) Upgraded Technological Iteration Empowers High Added Value of Products

Technological innovation is the core competitiveness. The popularization of advanced processes such as supercritical CO_2 extraction, low-temperature enzymatic hydrolysis and membrane separation coupling has promoted the transformation of products from extensive crude extraction to refined high-value products. Compared with traditional processes, supercritical CO_2 extraction can retain thermosensitive active ingredients at low temperatures, with product purity reaching over **98%** and no solvent residues, greatly improving quality and added value.

Leading enterprises can customize products with indicators such as active ingredient content and solubility according to the demand of downstream scenarios such as pharmaceuticals, food and daily chemicals to accurately match customer needs. Meanwhile, the upgrading of detection technologies such as high-performance liquid chromatography and mass spectrometry has realized the accurate quantification of active ingredients, ensuring stable and consistent product quality and further strengthening market competitiveness.

(3) Complete Industrial Chain with Significant Cost and Supply Chain Advantages

China is the world's major garlic producer, ranking first in both planting area and output. Large-scale planting bases have been formed in Shandong, Henan and Jiangsu, among which Shandong accounts for **42.8%** of the total output. Relying on a **2.8 million mu** fresh garlic base, a complete industrial chain has been constructed with sufficient, high-quality and cost-controllable raw material supply, enjoying significant cost advantages over overseas enterprises.

Leading enterprises have built an integrated layout of "planting – primary processing – refined extraction – terminal application". Through the "company + cooperative + farmer" model, standardized raw material planting is realized, with full-process quality control and loss reduction. Data shows that integrated enterprises have a raw material self-sufficiency rate of over **82%**, unit cost reduced by **25%**, and gross profit margin reaching **61.3%**. The export proportion of organic products in Shandong, Henan and other regions reaches **50%**, forming differentiated supply chain advantages and enhancing market competitiveness.

(4) Diversified Application Scenarios with Broad Market Demand Coverage

Garlic extract features outstanding multi-effectiveness of active ingredients and is widely used in five major fields: food and beverage, pharmaceutical and health care, daily chemicals and cosmetics, agricultural planting, and feed additives. It has formed a diversified demand pattern, effectively dispersing risks from single market fluctuations and boasting strong risk resistance.

- **Food sector**: Serves as a natural flavoring, antiseptic and antioxidant to replace chemical additives, suitable for meat products, condiments and other scenarios.
- **Pharmaceutical and health care sector**: Used as raw materials for antibacterial, blood lipid-regulating drugs and dietary supplements, recognized by the EU with remarkable efficacy.
- **Daily chemical sector**: Applied in skin care products, oral care and other products, with sales of related daily chemical products exceeding **1 billion yuan** in 2025 and a five-year CAGR of **21.5%**.
- **Agriculture and feed sector**: Adapts to the green policies of "antibiotic reduction and ban", serving as a plant-derived fungicide and antibiotic substitute with growing demand.

II. Future Development Prospects of the Garlic Extract Market

Combined with the industry status quo, policy orientation and changes in consumer demand, the future garlic extract market will present four major trends: "high-value, diversified, standardized and internationalized". The market scale will continue to expand, and industrial chain collaboration and technological innovation will become the core for enterprises to break through. Specific prospects are as follows.

(1) Steady Growth of Market Scale Led by High-Value Development

Benefiting from the global popularization of natural and healthy consumption, expansion of application scenarios and technological upgrading, the garlic extract market continues to heat up. By 2026, China's annual output reached **45,000 tons** with an output value of **6.28 billion yuan**, an increase of **75%** over 2021 and an average annual compound growth rate of **11.8%**. It is expected to grow at an average annual rate of **10.2%** from 2026 to 2030, with the output value exceeding **9.5 billion yuan** by 2030.

High-value development will be the core of growth: pharmaceutical-grade high-purity (≥98%) garlic extract is in strong demand and becomes the focus of enterprise layout; customized products develop rapidly to adapt to segmented scenarios such as sports nutrition and odorless cosmetics, enhancing added value. Meanwhile, high-value utilization of by-products such as garlic dregs will further tap industrial chain value.

(2) Continuous Expansion of Application Scenarios with Cross-Border Integration as a New Hotspot

In the future, application scenarios will extend from traditional food and pharmaceutical fields to emerging areas such as high-end daily chemicals, sports nutrition, pet health care and special medical foods, forming a cross-border integration pattern.

- High-end daily chemicals: Combined with ingredients such as hyaluronic acid to develop high-end antioxidant and oil-controlling products.
- Sports nutrition: Entering the sports supplement track relying on anti-fatigue and muscle-protecting effects.
- Pet health care: Serving as a natural intestinal regulator and immune enhancer to replace antibiotics, adapting to the development of the pet economy.
- Special medical foods: Focusing on people with intestinal disorders and low immunity to enrich product supply.

Driven by the promotion of edible and medicinal homologous policies, the application of garlic extract in functional foods will be further deepened, forming a new product form of "combination of medicine and food" and broadening market space.

(3) Gradual Improvement of Industry Standards and Accelerated Standardized Development

At present, the industry faces problems such as inconsistent standards and uneven product quality, restricting high-quality development. In the future, the government will improve industry standards, quality control and testing

standards, clarify core indicators such as active ingredients, purity and solvent residues, and standardize market order. Industry associations will promote enterprise self-discipline and establish a full-process quality traceability system to ensure product safety and stability.

International standards such as USP and EFSA have become rigid requirements for exports, which will force enterprises to improve product quality and promote the industry to integrate with international standards. Improved standards will accelerate industry reshuffle. Leading enterprises will further increase market share by virtue of standardized production and stable quality. The top ten enterprises accounted for **45.7%** of the total market share in 2026, and this proportion will continue to rise in the future.

(4) Accelerated International Layout and Sustained Release of Export Potential

China is a major producer and exporter of garlic extract, with products exported to Europe, the US, Japan, South Korea, Southeast Asia and other regions. The export volume reached **1.68 billion US dollars** in 2026, with four representative enterprises contributing **58.3%** of the total export volume. Relying on the deepening of RCEP and the expansion of global demand for natural ingredients, export potential will be further released.

Enterprises will expand emerging markets such as the Middle East, Latin America and Africa to diversify export risks; increase investment in international certifications to obtain FDA GRAS, EU Novel Food and other certifications to break green trade barriers; customize products for different regions to adapt to EU low-carbon, Japan’s high-end health and other demands; reach overseas terminals directly through cross-border e-commerce to enhance brand influence. At present, the carbon footprint intensity of domestic leading enterprises is better than the industry average, possessing international competitive advantages.

(5) Technological Innovation-Driven and Deepened Industrial Chain Collaboration

Industry competition will shift from price competition to technology and brand competition. Enterprises will increase R&D investment to break through new processes such as subcritical extraction and microwave-assisted extraction, improving the extraction efficiency and purity of active ingredients; optimize separation and purification technologies to expand applications in the pharmaceutical field; improve clinical efficacy verification to enhance scientific recognition of products; upgrade microencapsulation and other preparation technologies to solve pain points such as allicin oxidation and odor.

Industrial chain collaboration will be further deepened. Linkage between upstream and downstream enterprises will realize the integration of raw material supply, production and processing, and terminal sales, reducing costs and enhancing competitiveness; downstream enterprises will conduct joint R&D to expand application scenarios. Meanwhile, innovative models such as "digital order agriculture + carbon credits" and "shared processing alliances" will promote the green, low-carbon and efficient development of the industry.

III. Conclusion

With its natural properties, diversified efficacy, complete industrial chain and wide application scenarios, garlic extract occupies a core position in the natural health industry with significant competitive advantages and a continuously expanding market scale. In the future, driven by technological innovation, standard improvement, scenario expansion and international layout, the industry will usher in a golden period of high-quality development, while also facing challenges such as industry reshuffle and intensified international competition.

For industry partners, focusing on technological innovation to enhance product added value, strengthening industrial chain collaboration, deeply cultivating core scenarios, and attaching importance to brand building and international certification are the keys to seizing market dividends and building core competitiveness. Driven by policies, technology and consumption, China’s garlic extract industry will achieve a leap from "raw material export" to "standard leadership + brand export", occupying a more important position in the global natural ingredient market.