China's Position and Core Advantages in the Global Aloe Extract Supply Chain

Overview

As a natural plant-based active ingredient, aloe extract is widely used in daily chemicals & skincare, food & beverages, dietary supplements, pharmaceuticals, and other industries. Its supply chain covers such core links as aloe cultivation, primary processing, refined extraction, quality inspection, and global distribution.

At present, China has established an **absolute core position** in the global aloe extract supply chain and built the world's most complete and competitive supply chain system. Against the backdrop of the global supply chain landscape, China has evolved from a mere raw material producer into a **core manufacturing hub and strategic raw material base** for the global supply chain.

With core strengths including large-scale cultivation, iterative processing technology, controllable costs, and standardized quality, China deeply dominates the global supply pattern, value trend, and industrial development of aloe extract. As a pivotal hub of the global supply chain, China is not only the **world's largest producer and supplier**, but also a **leader in technological innovation, a participant in standard-setting, and a dominator of the market structure**. It directly determines the global supply scale, quality standards, and price trends of aloe extract, and plays an irreplaceable supporting role in the steady development of relevant downstream industries worldwide.

I. Core Position of China in the Global Aloe Extract Supply Chain

(I) From the Perspective of Global Industrial Layout and Scale

China has firmly become the **core hub** of the global aloe extract supply chain. It serves as both the **ballast** for global capacity and output, and the core raw material base supporting the development of the global industry, making it the **manufacturing center** of the global aloe industry.

This position is reflected in three dimensions: scale dominance, value upgrading, and pattern control, granting China an absolutely dominant share in the global market.

According to QYResearch:

- The global aloe extract market reached **21 billion RMB** in sales in 2025 and is projected to rise to **28.34 billion RMB** by 2032, with a **CAGR of 4.3%**.
- Global output of aloe extract concentrate reached **8,752 tonnes** at an average price of **USD 116/kg**.

China accounts for **over 60% of global aloe extract output** and **over 55% of global trade volume**, exporting to more than 80 countries and regions including Europe, the US, Southeast Asia, Japan, and South Korea.

Among the world's top 20 daily chemical and food enterprises, **16 use China as their core raw material supply base**. China's supply capacity directly determines the global supply-demand balance, acting as the **supply ballast** of the global aloe extract industry.

(II) From the Perspective of Supply Chain Completeness

China is the **only country** in the world to achieve full independent control over the entire chain:

Cultivation → Processing → Inspection → Distribution

It is also the only core player capable of efficient closed-loop management across the whole process. Unlike most countries that focus on a single segment and rely on imported raw materials or technologies, China:

- **Upstream**: Leverages natural advantages in tropical and subtropical regions such as Yunnan, Guangdong, and Hainan to form a large-scale cultivation pattern dominated by Aloe vera, supporting the world's largest aloe raw material supply system.
- **Midstream**: Reaches international advanced levels in refined processing technology.
- **Downstream**: Has built a global distribution network, supported by complete quality inspection and logistics systems.

The whole process—from fresh leaf harvesting, pre-treatment, extraction, and refinement to quality inspection, packaging, and global distribution—is independently controllable. This **integrated cultivation-processing layout** frees China from dependence on overseas raw materials and achieves self-sufficiency. It not only ensures the stability of its own supply chain but also provides **one-stop raw material supply solutions** for global downstream customers, making China an irreplaceable core link in the global aloe extract supply chain.

(III) From the Perspective of Industrial Voice and Value Upgrading

China has gradually gained **core pricing power and standard discourse power** in the global aloe extract supply chain, shifting from **passive participation to active leadership**. It has completed the key transformation from **export of roughly processed raw materials to export of technology-intensive, high-value-added products**, with its position in the global value chain continuously rising.

With accelerated domestic industrial standardization:

- **Plant Extracts—Technical Specifications for Production Processes (GB/T 46671-2025)** will be officially implemented in May 2026.
- A group standard for **Export Quality Specifications for Aloe Extracts** has been introduced, filling gaps in domestic whole-process standards for plant extract production.

A three-tier standard system has been formed:

National Standards + Industry Standards + Enterprise Standards

The quality standards of leading domestic enterprises have become global industry benchmarks, and their pricing directly influences global price trends. In global industrial cooperation, Chinese enterprises are capable of **leading cooperation rules and formulating industry standards**, fundamentally changing the previous pattern dominated by Europe and the US.

(IV) Industrial Upgrading

In its early stage, China's aloe industry mainly exported low-value-added, low-profit primary dried aloe, occupying the low end of the global value chain. Today, the export structure has been deeply optimized:

- The share of primary dried aloe exports has shrunk sharply.
- High-value-added products such as aloe gel, concentrate, and cosmetic-grade extract have become the main export drivers.

In 2025, the global market size of cosmetic-grade aloe extract was about **USD 668 million**, with Chinese products accounting for **over 50%** of global exports, becoming a core growth engine.

This transformation is driven by breakthroughs in refined processing technology and product structure upgrading. China can now customize products of different specifications for downstream applications:

- Cosmetic-grade aloe: aloin controlled to an ultra-low standard of **0.05 PPM**
- Food-grade products: strict control of microorganisms and solvent residues

Product added value has increased **3–5 times** compared with the early stage. China is no longer a **low-end supporting player** but a **core supplier of high-value-added aloe raw materials**, gradually mastering the mid-to-high end of the global value chain.

II. Core Advantages of China in the Global Aloe Extract Supply Chain

(I) Upstream Cultivation: Large-Scale Layout and Controllable Raw Material Quality

Raw material supply is the foundation of the aloe extract supply chain. Supported by unique climatic conditions and large-scale cultivation, China has built a stable, high-quality raw material supply system.

Domestic aloe cultivation is concentrated in Yunnan, Guangdong, Hainan, and other tropical/subtropical regions, dominated by Aloe vera:

- Yunnan hosts one of Asia's largest aloe-producing areas.
- Yunnan Wanlu Biotech alone operates a **13,000-mu** Aloe vera plantation.
- Taishan (Guangdong) and Hainan have laid out **4,500 mu** of organic aloe plantations.

All use **3-year-old high-quality Aloe vera** to ensure stable active ingredient content.

In cultivation management:

- Leading enterprises implement standardized, organic planting with strict control of pesticides and fertilizers.
- Products obtain triple organic certification from the US, EU, and China, meeting global high-end market requirements.
- The **"Enterprise + Base + Farmers"** model achieves large-scale, intensive management and lowers raw material costs.

Compared with traditional producers such as the US and Mexico, China's Aloe vera fresh leaf purchasing cost is **30–40% lower**.

Most plantations apply the **"6-Hour Production Rule"**: fresh leaves enter processing within 6 hours of harvesting,

minimizing enzymatic degradation and microbial risks and preserving natural active ingredients.

(II) Midstream Processing: Technological Iteration and Large-Scale Production

Refined processing is the core link determining product quality and added value. China leads the world in processing technology, production scale, and process standardization, while facing certain structural shortcomings—a pattern of **strong advantages, bottlenecks to break**.

Technological Innovation & Large-Scale Production

China has formed a mature and diversified processing system, widely applying advanced technologies:

- Low-temperature wall breaking
- Membrane separation
- Supercritical fluid extraction
- Freeze-drying
- Activated carbon decolorization and purification

Yunnan Wanlu Biotech took the global lead in applying membrane separation technology to aloe deep processing and built China's first membrane separation concentration line. Processing under normal temperature and aseptic conditions solves the problem of active ingredient loss caused by heating in traditional vacuum evaporation concentration, maximally retaining core actives such as aloe polysaccharides and acemannan, realizing the production of **"living aloe raw materials"**.

There are **more than 200 aloe extract processors** in China, including over 30 large-scale enterprises with **kilotonne-level annual capacity per plant**. High capacity concentration and scale effects enable:

- Rapid response to large global orders
- Order lead time shortened to **7–15 days**, far below the international average of 30 days

Process Standardization & Technical Shortcomings

With the upcoming implementation of national production standards, processors are further standardizing the whole production flow, clarifying technical parameters for each stage.

However, in the field of **high-purity active ingredient extraction**, China still lags behind top European and American enterprises:

- Core extraction technologies for high-end products (acetylated mannan, high-purity aloe polysaccharides) are not yet fully independent.
- Gaps remain in product purity and active ingredient retention.

This results in a structural mismatch:

Overcapacity in mid-to-low end, insufficient capacity in high end

This shortcoming is both a challenge for industrial upgrading and a core direction for future technological breakthroughs.

(III) Quality Control: Complete Standards and Strong Testing Capabilities

The quality of aloe extract directly determines the safety and efficacy of downstream products. China has built a **full-chain quality control system** that underpins global supply chain trust, while accelerating alignment with international standards.

Standard System

In addition to upcoming national technical specifications, China has issued multiple national standards for plant extracts. A three-tier standard system covers:

- Raw material quality
- Processing technology
- Product purity
- Active ingredient content
- Heavy metal and microbial limits

Enterprise standards in Hainan, for example, clearly require:

- Aloe gel polysaccharide ≥ 80000 mg/kg
- 0-acetyl content ≥ 75000 mg/kg
- Moisture ≤ 7.0 g/100 g

All indicators meet international advanced levels.

China is actively participating in international standard discussions and promoting alignment between its **Export Quality Specifications for Aloe Extracts** and mainstream international standards. However, Europe and the US still dominate core global standard-setting.

Testing Capability

Leading domestic enterprises are equipped with advanced testing instruments:

- HPLC
- GC
- Atomic absorption spectrophotometer

They can accurately detect key indicators (aloe polysaccharides, aloin, heavy metals, microorganisms) with precision at the **ppm level**, ensuring compliance with regulations worldwide.

A **full-process traceability system** is implemented, with records kept for at least 3 years. Products have obtained international certifications including:

- US FDA
- EU ECOCERT
- Japan JAS

These certifications break technical barriers in international trade and consolidate China’s core supply position.

(IV) Cost and Supply Chain Efficiency: Integrated Whole-Chain Synergy

Compared with other global suppliers, China's whole-chain synergy achieves **controllable costs and maximized supply chain efficiency**, one of its most competitive advantages, especially in emerging markets.

Cost Control

- Large-scale upstream cultivation reduces raw material costs.
- Large-scale midstream production and technological iteration lower processing costs.
- Complete downstream logistics and distribution cut circulation costs.

Comprehensive costs are **40–50% lower** than those of US and European enterprises, providing significant cost-performance advantages.

Supply Chain Efficiency

An integrated system has been formed:

Cultivation Base → Processing Enterprise → Logistics → Global Distribution

Industrial clusters in Yunnan, Shaanxi, Hunan, etc., share resources in cultivation, processing, and logistics. Proximity between bases and factories shortens transportation and reduces loss. Raw materials go from harvest to processing in only 6 hours.

Flexible adjustment of production plans and product specifications enables rapid response to customized demand. As a result:

- China holds **over 70% market share** in emerging markets (Southeast Asia, Middle East, Africa)
- Becoming the **only core source** of aloe raw materials for these regions

III. Global Market Structure and Supply Chain Risk Resilience

(I) Market Structure: Dual Challenges of Regional Divergence and Standard Barriers

China's global market layout shows a clear divergence:

Strong in emerging markets, difficult to break through mature markets

- **Emerging markets (Southeast Asia, Middle East, Africa)**:

China dominates with over **70% market share**, favored for high cost-performance and fast delivery.

- **Mature markets (Europe, US, Japan, South Korea)**:

Penetration is relatively low due to strict technical barriers, high certification thresholds, and stringent quality requirements. Chinese products are mostly concentrated in the mid-to-low end.

The core obstacle is the **strict technical standards and certification systems** in European and American mature markets.

(II) Risk Resilience: Comprehensive Protection of Supply Chain Security

Against global supply chain uncertainty, China's aloe extract industry has built strong resilience through full-chain independent layout and strategic planning by leading enterprises, while hidden risks remain.

1. Supply Chain Security

Overall external dependence is low, but two structural hidden risks exist:

- **Dependence on high-end raw material imports**: Core extraction technologies for acetylated mannan and high-purity aloe polysaccharides are not fully independent, leading to supply and cost volatility risks.
- **International trade policy fluctuations**: Tariff adjustments and trade barriers may impact exports, especially to mature markets.
- Natural factors (climate, pests and diseases) may also cause raw material supply fluctuations.

2. Industrial Resilience

The complete, independently controllable **Cultivation-Processing-Inspection-Distribution** industrial chain is the foundation of industrial resilience.

Leading enterprises (Yunnan Wanlu, Fujian Lixing, etc.) are building competitive barriers:

- Upstream: expanding cultivation bases for self-sufficiency and quality control
- Downstream: extending to refined processing and branding for higher added value and risk resistance

This full-chain layout provides strong buffer capacity against market volatility and raw material price hikes, making China the **ballast** of the global aloe industry.

IV. Summary and Outlook

In summary,

China has established an **irreplaceable core manufacturing hub and strategic raw material base** in the global aloe extract supply chain:

- **Macro**: Dominates global supply, drives value upgrading, and holds core discourse power.
- **Micro**: Possesses core competitiveness in large-scale technology, high-quality control, and cost-performance, while addressing high-end technical shortcomings.
- **Market**: Strongly leads emerging markets and steadily breaks into mature markets.
- **Risk**: Full-chain layout strengthens resilience, with hidden risks gradually controllable.

This position stems from unique natural conditions, industrial policy support, enterprise technological innovation, and full-chain layout. China continuously provides global downstream enterprises with **high-quality, low-cost, fast-delivery** aloe extract products, serving as a core guarantee for the stable development of global daily chemical, food, and pharmaceutical industries.

Future Outlook

Driven by the global trends of **“natural plant-based”** and **“clean label”** consumption, demand for aloe extract will keep growing. China will further consolidate its core position and enhance industrial influence by focusing on five goals:

1. **Break through high-end extraction bottlenecks** and achieve independence in high-purity active raw materials.
2. **Continue industrial upgrading**, expand high-value-added exports, and climb the global value chain.
3. **Accelerate standard internationalization**, align Chinese standards with global ones, and break mature market barriers.
4. **Strengthen full-chain synergy** and improve supply chain risk resistance.
5. **Optimize market layout**, deepen emerging markets and break into mature markets.

China will ultimately transform from a **major raw material supplier** to a **global industrial power**, providing stable, efficient, and high-quality support for the global aloe extract supply chain and leading the high-quality development of the global aloe industry.