The Core Status and Core Competitive Advantages of Chinese Maltitol in the Global Supply Chain

I. Core Status: The "Chinese Ballast Stone" of the Global Supply Chain

China has become the core supply engine and stable growth pole of the global **Maltitol** supply chain. It has built an industrial ecosystem featuring world-leading production capacity, independent and controllable technologies, global export coverage and full-chain independent control. It has promoted the formation of a stable global industrial pattern of "China-led and globally supported", serving as an indispensable core pillar for the global sugar reduction industry.

1. Production Capacity Scale and Supply Capacity

- **Absolute Leading Production Capacity**:
  By the end of 2025, China's total maltitol production capacity reached 250,000 tons, accounting for more than 50% of the global total and ranking first worldwide. It is estimated that the production capacity will expand to 280,000 tons in 2026, covering full-specification products including food-grade, pharmaceutical-grade, crystal-grade and liquid-grade, fully meeting global rigid demand with sufficient reserve capacity.
- **Leading Industrial Cluster**:
  Leading enterprises such as Shandong Bailong Chuangyuan, Baolingbao Biology, Zhejiang Huakang Pharmaceutical, Shandong Lvjian Biology and Zhucheng Dongxiao Biology have built 10,000-ton intelligent production lines. The combined production capacity of the top five manufacturers accounts for over 70% of China’s total capacity. Among them, Bailong Chuangyuan boasts world-leading single-plant capacity with a domestic market share of 18%. Industrial clusters in Shandong, Hebei and Jiangsu maintain top global capacity, with continuously rising industry concentration.
- **Strong Supply Chain Resilience**:
  Relying on functional sugar industrial agglomerations in Yucheng and Binzhou of Shandong, Xingtai of Hebei, Nantong of Jiangsu and other regions, a complete closed-loop industrial chain has taken shape: corn starch / malt syrup — liquefaction — saccharification — hydrogenation — purification — crystallization / concentration, with a raw material self-sufficiency rate exceeding 95%. Enterprises within clusters realize raw material sharing, energy supporting and logistics coordination, ensuring long-term stable bulk delivery for global customers and possessing world-leading risk resistance.

2. Global Market and Export Pattern

- **Leading Export Volume**:

  China's maltitol export volume hit 68,000 tons in 2025, a year-on-year increase of 12.3%; export value exceeded 320 million US dollars (approximately 2.32 billion RMB), with a year-on-year growth of 14.5%, accounting for over 55% of the total global maltitol trade volume, making China the world's largest maltitol exporter.

- **Extensive Global Coverage**:

  Products are sold to **80+** countries and regions including the European Union (35%), Southeast Asia (26%), North America (20%), Japan, South Korea, the Middle East and Latin America. The EU and North America are core high-end markets, while Southeast Asia and the Middle East are emerging growth markets, with in-depth global channel coverage and high customer stickiness.

- **Complete International Qualifications**:

  All leading enterprises have obtained mainstream global regulatory certifications including US FDA GRAS, EU EFSA Novel Food, South Korea KFDA, Japan Ministry of Health, Labour and Welfare, JECFA, Halal/Kosher, achieving globally recognized product compliance and realizing "one certification for global circulation".

3. Domestic Industrial Policy Support

- **Strong Policy Support**:

  Maltitol industry is included in key supported fields of the **14th Five-Year Plan for Bioeconomic Development** and the **Healthy China 2030 Outline**. The National Health Commission clarifies maltitol as a safe and legal food additive applicable to all categories of food and beverages, with continuous policy dividends released.

- **Sound Standard System**:

  The national standard **Maltitol (GB/T 20880-2024)** was officially implemented in 2024, specifying core indicators such as purity ≥99.0%, heavy metals and microorganisms. A three-level standard system led by national standards, supplemented by group standards and refined by enterprise standards has been established to standardize high-quality industrial development.

II. Core Competitive Advantages: Seven Barriers to Build a Global Moat

The competitive advantages of Chinese maltitol stem from in-depth coordination in seven dimensions: technology, cost, industrial chain, compliance, application, production capacity and internationalization, forming comprehensive competitiveness that global peers cannot replicate.

1. Technological & Process Advantages: World-Class Biomanufacturing

- **Independently Controlled Core Technologies**:

  Enterprises including Bailong Chuangyuan and Baolingbao have independently developed integrated technologies of dual-enzyme conversion + continuous hydrogenation + membrane separation + continuous crystallization, breaking overseas technological monopolies. The maltitol conversion rate has increased from 75% of traditional processes to 88%-93%, reaching 95% in some leading enterprises, securing an absolute leading position worldwide.

- **World-Leading Process Routes**:

- Green Enzymatic Process: Leading enterprises pioneered low-temperature enzymolysis and immobilized enzyme recycling technology, cutting energy consumption by 25%, water consumption by 30% and carbon emissions by 40%, conforming to the global dual-carbon trend and setting a global benchmark for green manufacturing.
- High-Purity Refining: Independently developed molecular sieve desalination and nanofiltration membrane separation technology ensures stable product purity above 99.5%, ash content ≤0.05% and heavy metals ≤0.001%. Core indicators outperform EU EFSA and US USP standards, meeting high-end pharmaceutical-grade demands.

- **Intelligent Equipment Upgrade**:

  Globally leading fully automated closed production lines have been built to realize full-process intelligent control from raw materials to finished products, boosting production efficiency by 40% and achieving the world's best batch stability, greatly reducing customers' usage risks.

2. Cost Control Advantages: Optimal Scale and Full-Chain Cost Reduction Worldwide

- **Remarkable Scale Effect**:

  China accounts for over 50% of global maltitol production capacity. Leading enterprises have a single-plant scale exceeding 50,000 tons per year, with unit fixed costs 30%-35% lower than European and American counterparts, enjoying exclusive global scale dividends.

- **Full-Chain Cost Advantages**:

  Located in major corn producing areas of Shandong and Hebei, the procurement cost of corn starch is 20%-25% lower than that in Europe and America. Coordinated

supporting of energy, logistics and auxiliary materials within industrial clusters reduces comprehensive costs by 18%-22% compared with overseas manufacturers, delivering irreplaceable global price competitiveness.

- **Continuous Technological Cost Reduction**:
  Technological innovations such as improved enzyme conversion rate, catalyst recycling and energy consumption reduction drive an annual decline of 3%-5% in unit production costs, further consolidating the global low-cost edge.

3. Full Industrial Chain Advantages: The World's Exclusive Closed-Loop Ecosystem

- **Full-Chain Independent Control**:
  China owns the world's only industrial system with full independent control covering corn planting — starch processing — enzyme preparation production — hydrogenation reaction — refining and crystallization — packaging and logistics, with no reliance on imports in key links and leading global supply chain security.
- **Industrial Cluster Coordination**:
  Three major industrial clusters in Shandong, Hebei and Jiangsu gather full-factor resources including raw materials, equipment, technology, talents and logistics. Enterprises conduct collaborative R&D, capacity sharing and joint overseas expansion, creating cluster competitiveness of "1+1>2" with no comparable counterparts globally.
- **Flexible Production Capacity**:
  It can rapidly switch to multi-specification products such as crystalline maltitol, liquid maltitol and high-purity maltitol to flexibly meet differentiated global customer demands. The delivery cycle is shortened by 50% compared with overseas suppliers, delivering the world's best service efficiency.

4. Global Compliance Advantages: Mutual Recognition of Global Standards and Certifications

- **National Standards Aligned with International Norms**:
  Core indicators of China's national standard for maltitol (GB/T 20880-2024) surpass international standards, with a stricter purity requirement of ≥99.0% and more stringent limits on heavy metals and microorganisms, providing Chinese compliance endorsement for export products and greatly enhancing global customer trust.
- **Full Coverage of International Qualifications**:
  All leading enterprises have obtained full coverage of mainstream global certifications including FDA GRAS, EFSA, KFDA and JECFA, ranking first globally in the quantity and pass rate of qualifications to meet compliance requirements of all countries and regions worldwide.

- **One-Stop Compliance Services**:
  Enterprises provide supporting documents including toxicological reports, process compliance statements, label compliance plans and impurity detection reports, offering one-stop compliance solutions to reduce customers' compliance costs and risks.

5. Application Innovation Advantages: Full-Scenario Adaptation and Customized Services

- **Irreplaceable Functional Properties**:
  Maltitol has a sweetness of about 90% of sucrose and only 50% of sucrose's calories. It features no blood sugar elevation, no insulin stimulation, anti-caries performance, high stability and pure taste, perfectly adapting to the global trends of sugar reduction and healthy consumption, serving as a "golden product" in the sugar substitute industry.
- **In-Depth Full-Scenario Penetration**:
  Widely applied in sugar-free chewing gum (35%+), sugar-free beverages (28%+), baked foods, dairy products, confectionery, health products, oral care, pet food, pharmaceutical excipients and other fields. In the pharmaceutical sector, it adapts to special meals for diabetics and sugar-free pharmaceuticals; in oral care, it prevents dental caries; in pet food, it meets hypoallergenic and low-calorie demands.
- **Customized Solution Services**:
  Tailored services including compound formulas (maltitol + erythritol / steviol glycoside), flavor optimization, stability improvement and cost optimization are provided for different product categories and customer needs, helping customers develop differentiated products and form a positive cycle of "application — capacity — technology".

6. Capacity Expansion & Capital Advantages: Continuous Consolidation of Global Supply

- **Strong Capital Strength of Leading Enterprises**:
  Listed enterprises such as Bailong Chuangyuan, Baolingbao Biology and Zhejiang Huakang Pharmaceutical boast sufficient capital and low asset-liability ratios. In 2025, leading enterprises invested over 450 million RMB in capacity expansion, technological R&D and green upgrading to continuously strengthen production capacity advantages.
- **Accelerated Capacity Integration**:
  Industry merger and integration are accelerating, promoting capacity concentration among leading enterprises. The top five manufacturers' capacity share has risen to

over 70%, further improving overall industrial competitiveness.

- **Precise Matching of Capacity and Demand**:
  The rapid release of domestic production capacity and steady growth in global demand (CAGR of approximately 7.2%-7.8% from 2025 to 2030) form a virtuous cycle, supporting China's long-term core position in the global supply chain.

7. International Layout Advantages: Dual Leadership in Global Channels and Brand Influence

- **In-Depth Global Channel Development**:
  Leading enterprises have established **15+ overseas offices/subsidiaries in North America, Europe, Asia-Pacific, the Middle East, Latin America and other regions, with localized sales and technical service teams to provide full-process services including raw material supply, application support, compliance consultation and logistics distribution.
- **Deepened International Cooperation**:
  Strategic partnerships have been established with global food and pharmaceutical giants such as Mars, Coca-Cola, Nestlé, Ferrero and Bayer, as well as regional distributors, enabling rapid access to mainstream global supply chains. Technical cooperation on strains and application technologies with enterprises including DuPont and DSM has enhanced global technological collaboration.
- **Highlighted International Brand Influence**:
  Through global industry exhibitions such as FIC, IFT, Anuga and HiFi, Chinese maltitol technologies and products are showcased, shaping an international brand image of "Intelligent Manufacturing in China, Cost-Effectiveness, Compliance & Reliability, Green & Low-Carbon", with continuously growing global recognition.

III. Global Supply Chain Value: Core Contributions of China

1. **Supply Stabilizer**:
   Supplying **50%+ of global production capacity to meet 45%+ of global maltitol demand**, stabilizing the supply chain of the global sugar reduction industry and avoiding global market shortages and drastic price fluctuations.
2. **Price Ballast Stone**:
   Driven by technological cost reduction, scale effects and full-chain advantages, it promotes rational pricing of global maltitol, accelerates the popularization of healthy sugar substitutes worldwide, cuts production costs for downstream enterprises and benefits global consumers.

3. **Technology Enabler**:
   Independently developed strains, green enzymatic processes, continuous crystallization technologies, compliance systems and application solutions are exported globally, driving technological upgrading of the global maltitol industry and improving the overall efficiency and green manufacturing level of the global sector.
4. **Market Pioneer**:
   Through export and overseas capacity layout, emerging markets in Southeast Asia, the Middle East, Latin America and other regions are deeply explored, expanding global application scenarios of maltitol, driving sustained growth of the global sugar reduction industry and boosting the development of global health undertakings.

IV. Summary and Outlook

Relying on seven core advantages covering technology, cost, industrial chain, compliance, application, production capacity and internationalization, Chinese maltitol has become the absolute core supplier, technology leader and rule participant in the global supply chain. In the future, with the further release of domestic production capacity, implementation of overseas capacity layout, continuous upgrading of green and low-carbon technologies and improvement of the global compliance system, China will further consolidate its global leading position, promote maltitol to become a mainstream healthy global sugar substitute, provide **Chinese solutions** and contribute **Chinese strength** to the global sugar reduction cause and the development of the health industry.