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# Market Research

## Global Prebiotics Market: A Comprehensive Analysis

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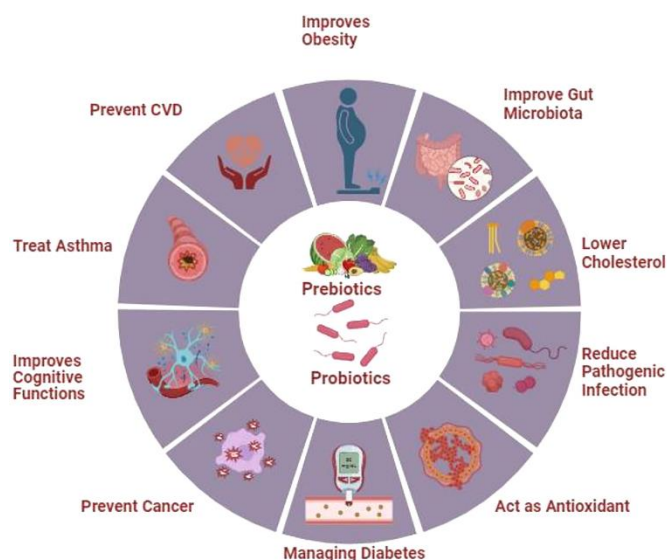
# Introduction

Rising consumer demand for gut health and immune-boosting ingredients is fueling the expansion of the prebiotics market, as more individuals seek functional foods and nutraceuticals that promote digestive wellness and overall disease prevention.

Prebiotics support the growth of beneficial gut bacteria and are recognized for their ability to improve gut health, enhance the production of short-chain fatty acids (SCFAs) with anti-inflammatory properties, and promote gut lining integrity.

Growing focus on gut health opens significant opportunities across various industries, including functional foods, beverages, dietary supplements, and even cosmetics. The demand is further fueled by the shift towards plant-based and clean-label products, as consumers seek natural and sustainable solutions to support their health.

While dietary fibers such as inulin from chicory root are traditionally associated with prebiotics, non-fiber substances, such as polyphenols, are emerging as key players. Polyphenols, found in plant-based ingredients, offer antioxidant properties and selectively promote the growth of beneficial bacteria in the gut, making them valuable for supporting digestive and overall health.



**Potential Health Benefits of Prebiotics & Probiotics**

## Applications of Prebiotics

The integration of prebiotics across the food industry presents substantial market opportunities driven by health-conscious consumers and the demand for functional foods.

In the dairy sector, products like yogurt and cultured cream are capitalizing on the gut health trend, with significant growth potential in emerging markets such as Asia-Pacific and Latin America.

Similarly, beverages, including soy-based and fermented drinks, are witnessing increased adoption due to the popularity of plant-based diets and the demand for dual-functional products like synbiotic beverages.

In bakery and confectionery, prebiotic-enhanced products cater to the clean-label and gluten-free movements, offering opportunities for premium pricing, especially in North America and Europe.

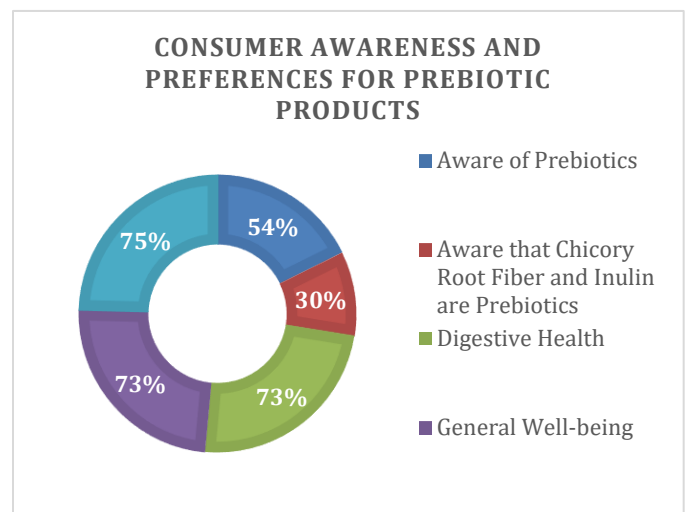


Functional confectionery, including sugar-free chocolates and snacks, is expanding rapidly due to the growing diabetic and weight-conscious consumer base, with Asia-Pacific emerging as a key growth region.

The use of prebiotic-derived sweeteners, such as xylitol and erythritol, aligns with the demand for natural, low-calorie sugar alternatives, benefiting from regulatory support and health trends. In the meat industry, prebiotics enhance product appeal through functional claims, particularly in processed meats, targeting health-conscious consumers in developed markets.

## Consumer Trends Driving Prebiotic Demand

A global survey of 10,000 consumers across 10 countries reveals strong consumer awareness and preference for prebiotic products. 54% of respondents are familiar with prebiotics, and 30% recognize chicory root fiber and inulin as prebiotics. When it comes to purchasing decisions, 73% of consumers prioritize digestive health, while another 73% focus on general well-being. Additionally, 75% of consumers emphasize the importance of product efficacy, health claims, and science-backed evidence when selecting prebiotic-enriched products. These insights highlight the growing demand for scientifically validated, health-oriented prebiotic ingredients in the global food and beverage market.



Source: FoodBusiness News

## Sustainability Analysis

Traditional prebiotic production methods were resource-heavy, relying on materials like chicory root and milk-based lactose, contributing to higher environmental impact. However, sustainable processes like microbial fermentation are now reducing energy and water usage. Mushrooms are emerging as a sustainable alternative for producing prebiotics with a lesser environmental footprint.

### Eco-friendly Production Process

Mushrooms are gaining traction in the food and nutraceutical markets due to their sustainability, low environmental impact, and cost-effectiveness, especially as they grow on agro-industrial waste. With increasing consumer demand for natural and eco-friendly ingredients, mushrooms are emerging as a key alternative in functional foods and dietary supplements.

Beyond sustainability, mushrooms offer health benefits as prebiotics, promoting beneficial gut microbiota and boosting digestion, immune function, and disease prevention. As research supports their efficacy, companies are investing in mushroom-based products, tapping into the growing market for natural, health-enhancing ingredients.

For example, Om Mushroom Superfood company specializes in organic, functional mushroom products rich in bioactive compounds like beta-glucans and prebiotics. Their product range includes powders, capsules, and drink mixes aimed at enhancing immune function, cognitive health, gut health, and physical performance.

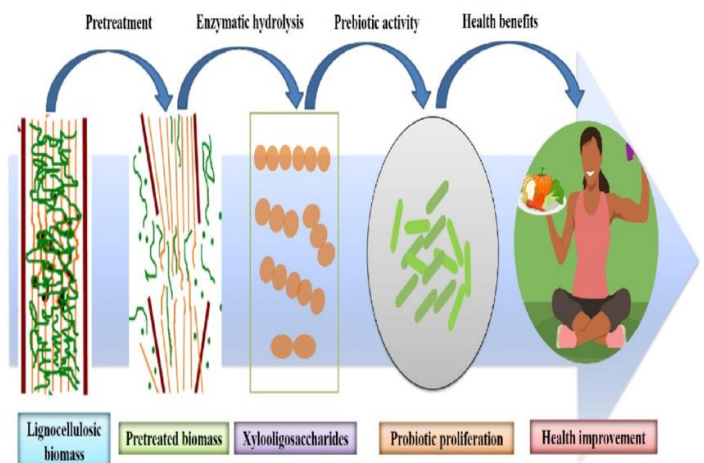
### Bioeconomy Innovation

The circular bioeconomy increasingly focuses on sustainable biomass utilization, particularly lignocellulosic biomass (LCB), for producing value-added materials like prebiotics such as xylooligosaccharides (XOS). XOS, derived from LCB through enzymatic hydrolysis or microbial fermentation, offers significant health benefits and is gaining traction in the food industry. A few companies are at the forefront of developing innovative, eco-friendly pretreatment methods to enhance the efficiency and sustainability of XOS production, addressing market demands for natural, functional food ingredients.

For example, Ingredion focuses on sustainable sourcing and green extraction methods, improving prebiotic production efficiency while minimizing environmental impact. Their zero-waste strategy supports circular economy principles and enhances resource utilization.

Beneo produces prebiotics like inulin and XOS from renewable plant-based materials, using low-energy, water-based methods to reduce environmental impact and ensure sustainable sourcing. Their commitment to traceability ensures product transparency.

Tate & Lyle prioritizes energy efficiency, renewable energy sources, and sustainable production techniques to lower carbon footprints. Their circular economy initiatives ensure by-products are recycled or upcycled, promoting sustainability.



## Early-Stage Innovations

Early-stage innovations in the prebiotics market focus on advanced extraction techniques to isolate high-purity compounds that target specific gut bacteria, enhancing product efficacy. Novel formulations combine prebiotics with fibers, polyphenols, and bioactives, enhancing the multifunctionality of food products. Integrating prebiotics into cosmetics for microbiota-balancing skincare and adopting sustainable production methods using agricultural byproducts highlight the industry's focus on multifunctionality and eco-consciousness. Personalized prebiotics tailored through microbiome data is gaining traction, supported by stringent safety assessments to meet evolving regulatory standards and consumer demands for precision health solutions.

### Next-Generation Prebiotics

Innovative extraction techniques such as enzyme-assisted extraction, supercritical fluid extraction (SFE), and microwave-assisted extraction (MAE) are improving the precision and yield of bioactive compounds. These methods isolate specific bioactive compounds that promote the growth of targeted gut bacteria, enabling more precise and effective formulations. This advancement aligns with the growing demand for functional and tailored health solutions.

### Prebiotic Blends

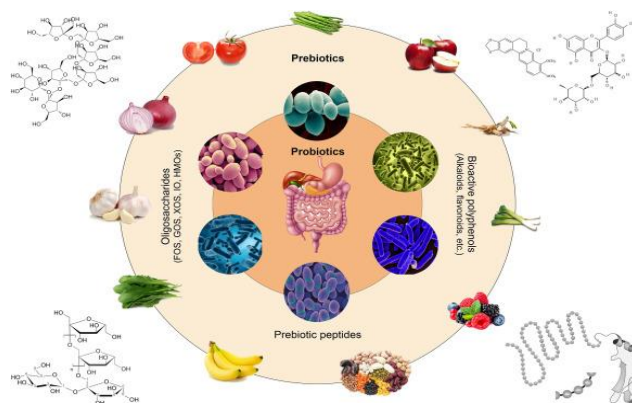
Innovative prebiotic blends combining fibers (FB) and polyphenols (PP) show additive benefits in promoting gut health by enhancing short-chain fatty acid (SCFA) production, supporting beneficial bacteria, and reducing harmful metabolites. The synergy between FB and PP improves antioxidant capacity and microbial balance. Further research refines these blends for more effective microbiome-targeted dietary interventions.

### Sustainability and Upcycling

Eco-friendly prebiotic production utilizes agricultural byproducts, minimizing waste and contributing to a circular economy. Sustainable practices improve the industry's environmental footprint while appealing to eco-conscious consumers. These methods align with global sustainability goals and market expectations.

### Regulatory Compliance and Safety Assessments

Personalized prebiotics, tailored via microbiome data, are gaining traction, necessitating strict safety evaluations to meet regulatory standards. These customized solutions offer precise health benefits, aligning with consumer demand for targeted, data-driven products. This trend strengthens the prebiotics market's competitive edge.



## R&D Breakthroughs

The field of prebiotics has seen significant advancements in recent years, with growing recognition of their role in supporting gut health and broader wellness outcomes. R&D breakthroughs in prebiotics are primarily focused on identifying new prebiotic ingredients, understanding their mechanisms of action in the human body, and exploring their impact on

various health aspects, including digestion, immune function, metabolic health, and even mental well-being.

For example, The BENEIO-Institute has solidified its leadership in prebiotic research by focusing on continuous R&D advancements and fostering collaborations with global experts. Through active participation in international scientific conferences and symposia, such as the Dietitian Spring Symposium and the Nutrition Society of Malaysia Conference, BENEIO is at the forefront of exploring new health applications of prebiotics, including the gut-brain axis.

The company collaborates with scientists and health professionals worldwide to integrate the latest research findings into practical applications, enhancing the understanding of prebiotics like chicory root fibers (inulin and oligofructose) in supporting overall health beyond digestive benefits. In addition to global research efforts, BENEIO tailors its initiatives to address region-specific health challenges. For example, in Malaysia, the company highlighted the role of prebiotics in addressing the dual burden of nutrition (stunting and obesity) and supporting metabolic health.

By translating scientific research into actionable solutions, BENEIO not only educates professionals but also drives the development of health-focused food and beverage products, ensuring that their R&D breakthroughs lead to tangible improvements in consumer health worldwide.

## Key Innovations

- In September 2024, Benicaros precision prebiotic is a cutting-edge ingredient that remains intact during digestion, reaching the gut to enhance immune cell responses for quicker, more effective reactions. It promotes a balanced gut microbiome, irrespective of an individual's bacterial composition. Studies show that it significantly increases short-chain fatty acid production (acetate, propionate, and butyrate) while minimizing gas production compared to conventional prebiotics.
- In June 2024, The Cranberry Limeade Prebiotic Sparkling Water, powered by Fibersol, a soluble prebiotic fiber, offers both hydration and gut health benefits. With under 1g of sugar and 4g of dietary fiber, it delivers a low-calorie, functional beverage option. Its digestive-friendly properties ensure a pleasant consumer experience, supporting the increasing demand for health-focused drinks.



# Regulatory Trends in Prebiotics

Claims and Labeling Standards	Natural and Organic Certification	Focus on Safety	Global Harmonization
<ul style="list-style-type: none"><li>•The European Food Safety Authority (EFSA) enforces strict regulations on health claims for prebiotics. Companies marketing prebiotics like inulin or fructooligosaccharides (FOS) must back their claims, such as "supports digestive health," with clinical trial evidence. Non-compliance with EFSA's regulations can result in product recalls or rejection of marketing approvals in Europe.</li></ul>	<ul style="list-style-type: none"><li>•In the US, the USDA Organic Certification is required for prebiotics claiming organic status. For example, organic inulin must meet USDA Organic standards, which include restrictions on synthetic pesticides and fertilizers.</li><li>•Similarly, the EU Organic Certification ensures that prebiotics sold in Europe adhere to strict organic farming standards, boosting marketability among consumers seeking sustainable products.</li></ul>	<ul style="list-style-type: none"><li>•The US FDA's Generally Recognized as Safe (GRAS) process ensures that new prebiotic ingredients undergo rigorous safety assessments. Prebiotics from novel sources, such as seaweed or fermented products, must undergo toxicological testing and allergenicity reviews before being marketed. This process ensures consumer safety and regulatory compliance for innovative prebiotics.</li></ul>	<ul style="list-style-type: none"><li>•Codex Alimentarius, a global food standards body, is working to harmonize definitions for prebiotics such as inulin, oligofructose, and galactooligosaccharides (GOS). These global standards facilitate consistent labeling and health claims across international markets, helping companies navigate regulatory processes more easily and reducing delays in market entry.</li></ul>

## Sustainability Sourcing Strategies

**Traceable Supply Chains:** Companies are prioritizing transparency by implementing traceable supply chains for raw materials like chicory root (inulin) and lactose (GOS). Utilizing technologies like blockchain, companies ensure ethical sourcing and environmental responsibility. This traceability builds trust and meets consumer demand for transparency while ensuring compliance with sustainability regulations.

For example, Ingredion has committed to traceability initiatives for its plant-based ingredients like inulin sourced from chicory root. Ingredion partners with suppliers to track the entire lifecycle of their products, ensuring that they meet environmental and ethical standards.

**Diversification of Raw Materials:** To reduce the environmental strain caused by traditional raw materials, companies are shifting towards diversification of raw materials. This includes sourcing prebiotics from alternative and sustainable sources such as seaweed, mushrooms, and lesser-used agricultural crops such as sorghum or banana peels.

For example, DuPont Nutrition & Biosciences has been researching the use of alternative prebiotic sources, such as seaweed and mushrooms, to create more sustainable prebiotics. By incorporating marine-based prebiotics, DuPont not only reduces the environmental impact of land-based farming but also introduces novel functional ingredients that may offer additional health benefits.

**Farmer Collaboration:** Farmer collaborations are vital for ensuring sustainable sourcing practices at the grassroots level. By partnering directly with local farmers, companies can



introduce and promote sustainable crop cultivation techniques that minimize the ecological impact.

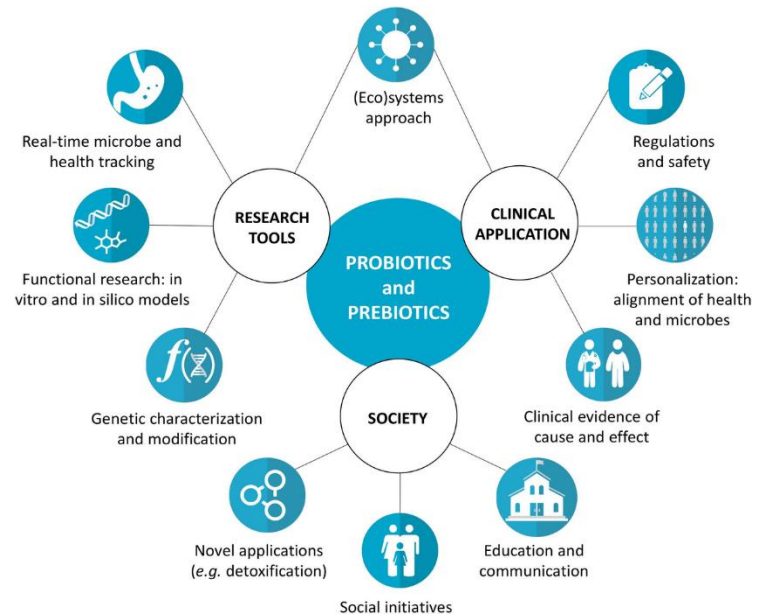
For example, BENEIO, a leading supplier of functional ingredients, has been working closely with farmers to implement sustainable farming practices for the cultivation of chicory root used in producing inulin. Through its Sustainable Farming Program, BENEIO supports farmers in adopting eco-friendly practices, such as reducing water consumption, minimizing chemical inputs, and improving soil health.



# Future Outlook of Prebiotics

The prebiotics market is increasingly driven by its integral role in fostering beneficial gut bacteria, highlighted by the growing body of research tools and clinical applications outlined in the diagram. Innovations in real-time microbe and health tracking, along with advancements in genetic characterization and modification, are pushing the boundaries of personalized health solutions. This scientific progress supports the market's expansion as it taps into novel applications like detoxification, enhancing its appeal across various consumer segments.

Additionally, societal engagement through educational initiatives and social programs is boosting public awareness about the benefits of prebiotics, encouraging healthier lifestyle choices. Regulatory bodies are playing a supportive role by ensuring the safety and efficacy of prebiotic products, thus bolstering consumer trust. The ecosystem approach to health, which considers environmental and personal health holistically, is expected to drive further growth in the prebiotics market by aligning with broader consumer trends towards sustainable and personalized health solutions.



## Conclusion

The prebiotics market is experiencing significant growth driven by scientific advancements, sustainability imperatives, and an increasing demand for personalized health solutions. Ongoing research into the microbiome continues to reveal the profound health benefits of prebiotics, particularly in areas like gut health, immune function, and metabolic disorders, reinforcing their clinical and regulatory credibility. Manufacturers are responding by adopting sustainable sourcing strategies such as eco-friendly production methods, mushroom-based prebiotics, and utilizing agricultural byproducts, aligning with global environmental goals and consumer preferences for green products. Innovative extraction technologies are further enhancing product efficacy by enabling the production of targeted, high-purity prebiotics that cater to the growing demand for functional and tailored health solutions. The future of the prebiotics market will continue to evolve, with personalized nutrition and functional foods becoming dominant segments. Companies that invest in clinical validation, sustainable sourcing, and precision formulations will lead the market, capitalizing on the increasing consumer shift towards health-conscious, eco-friendly products, ensuring a strong competitive advantage in the future.

# About Us

DataM Intelligence was incorporated in the early weeks of 2017 as a Market Research and Consulting firm with just two people on board. Within a span of less than a year, we have secured more than 100 unique customers from established organizations all over the world. DataM Intelligence has set its standards in the market, which resulted in having our own set of recurring clients who are willing to invest in us and build business relationships with



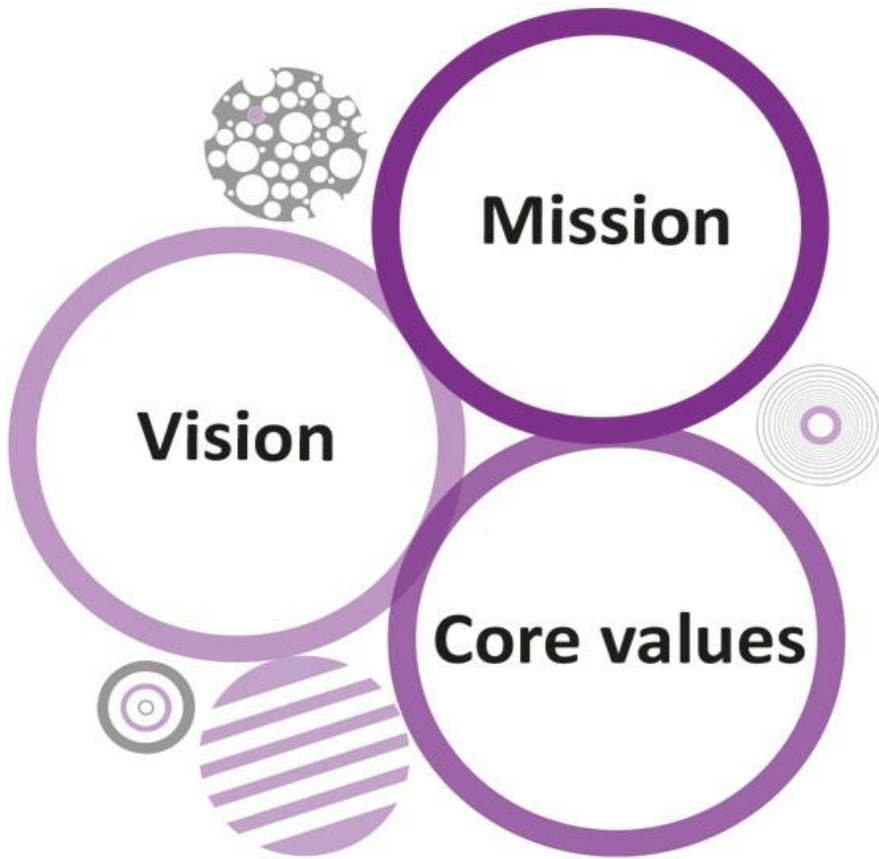
customers across the globe. We started working with clients on customized reports and providing market intelligence insights pulling ahead of our competitors.

The Company has taken up many consult projects during this growth period, which paved the way for introducing new launches in the forthcoming years.

We serve various individuals and entities across B2B, including Industry Investors & Investment Bankers, Research Professionals, Emerging Companies, Raw Material Suppliers/ Buyers, Product Suppliers/ Buyers, and Research Institutes.

Our services help clients make informed strategic decisions to leverage expertise and minimize risks by

- Ascertaining target potential customers
- Identifying key market trends and competitor strategies
- Analysing competitors' products, pricing, financials, sales, and strategy
- Identifying investment opportunities
- Interpreting Market Entry Prospects



## Mission

To empower clients with advanced Research & Consulting services that will enhance their competitiveness across different geographies in their respective industry domains, which in turn enable them to meet their business goals.

## Core Values

We focus on being remarkable, taking ownership, nurturing & trusting, and in the end execution matters.

We are inclusive and collaborative & execution excellence is the core value of our firm. We are obsessed with

being responsible and delivering premium value to our customers.

## Methodology

The major success story starts with DataM's research methodology. The DataM's motive is to provide the best, most accurate, and most precise information to its clients. We support our partners, i.e., clients, to recognize the major opportunities by understanding and studying the industry's current and futuristic scenario to help them in their business portfolio.

The research team of DataM Intelligence is highly knowledgeable, with more than half of its strength, and has experience of over 7 years in purely business and management consulting, with a strong technical and analytical approach.