

# **Vietnam Dairy Enzymes Market, By Type (Lactase, Chymosin, Microbial Rennet, Lipase and Others), By Application (Milk & milk-based products, Cheese, Ice-Cream & Desserts, Yogurt, Whey, Infant Formula and Others), By Source (Plant and Animal & Microorganisms), By Region, Competition Forecast & Opportunities, 2019-2029F**

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## **Abstracts**

Vietnam Dairy Enzymes Market was valued at USD 12.10 million in 2023 and is anticipated to project steady growth in the forecast period with a CAGR of 4.58% through 2029. The Vietnam Dairy Enzymes Market is witnessing robust growth, propelled by increasing consumer demand for dairy products, technological advancements in enzyme production, and a thriving dairy processing sector. The surge in dairy consumption in Vietnam is largely attributed to the country's economic expansion, urbanization, and rising disposable incomes. As living standards improve, a greater number of consumers are incorporating dairy into their diets for its nutritional benefits. This has spurred the demand for dairy enzymes, essential for manufacturing high-quality dairy products such as milk, cheese, yogurt, and infant formula.

The market is dynamic and continually evolving, influenced by multiple growth drivers. As consumer preferences increasingly shift towards healthier and more diverse dairy options, the demand for specialized dairy enzymes is anticipated to grow significantly. This evolving landscape presents substantial opportunities for market participants to innovate and expand their offerings.

## **Key Market Drivers**

## Increasing Demand for Dairy Products

The surge in demand for dairy products in Vietnam acts as a powerful catalyst propelling the growth trajectory of the country's dairy enzymes market. As Vietnam experiences economic growth and urbanization, consumer preferences are evolving towards healthier and more diverse dietary choices. Dairy products, renowned for their nutritional value and versatility, are witnessing a surge in demand among Vietnamese consumers seeking wholesome and convenient food options. Increasing affluence within the Vietnamese population translates to greater purchasing power, enabling consumers to incorporate dairy products into their daily consumption patterns. With higher disposable income levels, there is a noticeable shift towards premium and value-added dairy offerings, driving the need for advanced enzymatic solutions to enhance product quality and appeal.

Heightened awareness of health and wellness among Vietnamese consumers is steering them towards dairy products perceived as natural, nutritious, and free from artificial additives. Enzymes play a pivotal role in the production of such dairy products by facilitating processes that improve nutritional content, texture, and flavor, aligning with the health-conscious preferences of discerning consumers. The diversification of dairy product offerings, including milk, yogurt, cheese, and ice cream, to cater to varied consumer preferences further amplifies the demand for dairy enzymes. Enzymes are indispensable in optimizing the production processes of these diverse dairy products, ensuring consistency, efficiency, and superior sensory attributes, thereby meeting the evolving demands of a dynamic market. To meet the escalating demand for dairy products while maintaining profitability and competitiveness, dairy producers in Vietnam are embracing modernization and innovation across their operations. This entails the adoption of advanced technologies, including enzymatic solutions, to streamline production processes, enhance product quality, and improve resource efficiency, driving the integration of dairy enzymes into the value chain.

The burgeoning demand for Vietnamese dairy products in international markets presents lucrative export opportunities for local dairy producers. To capitalize on these opportunities and maintain a competitive edge in the global arena, dairy manufacturers prioritize product quality, consistency, and compliance with international standards, thereby driving the demand for high-quality dairy enzymes to support their export-oriented endeavors. The increasing demand for dairy products in Vietnam serves as a pivotal driver shaping the growth trajectory of the dairy enzymes market. This demand surge is underpinned by evolving consumer preferences, rising disposable incomes, health and wellness trends, product diversification, industry modernization, and export

opportunities, collectively fostering a conducive environment for the widespread adoption of dairy enzymes across the Vietnamese dairy industry.

### Technological Advancements in Enzyme Production

Technological advancements in enzyme production significantly propel the growth of the Vietnam Dairy Enzymes Market by enhancing efficiency, quality, and innovation in dairy processing.

Modern biotechnology enables the development of enzymes with high specificity and efficacy tailored for specific dairy applications. Precision in enzyme action improves the consistency and quality of dairy products such as cheese, yogurt, and lactose-free milk. For example, the use of recombinant DNA technology allows for the production of enzymes that operate optimally under specific pH and temperature conditions prevalent in Vietnamese dairy processing facilities, enhancing overall production efficiency and product quality. Advancements in fermentation technology and microbial engineering have reduced the cost of enzyme production. Techniques such as submerged fermentation and solid-state fermentation optimize yield and reduce waste. These cost efficiencies are crucial for dairy producers in Vietnam, allowing them to incorporate high-quality enzymes without significantly inflating production costs, thereby maintaining competitive pricing in both domestic and export markets. Innovations in enzyme formulation, including encapsulation and immobilization, have significantly improved the shelf life and stability of enzymes. These advancements ensure that enzymes remain active and effective over extended periods and under various storage conditions, which is particularly important given Vietnam's tropical climate. This stability reduces spoilage and wastage, ensuring consistent enzyme availability and reliability for dairy producers.

The ability to engineer enzymes for specific functionalities allows for the development of customized solutions that address unique challenges in Vietnamese dairy production. For instance, enzymes can be tailored to improve milk coagulation properties in cheese production or to enhance the probiotic qualities of fermented dairy products. Such customization aligns with the growing consumer demand for differentiated and high-value dairy products, driving market growth. Advances in process automation and real-time monitoring systems integrated with enzyme application streamline dairy production processes. Technologies such as membrane bioreactors and high-performance liquid chromatography (HPLC) enable precise control over enzyme reactions, leading to more efficient production cycles and higher product yields. This operational efficiency translates into higher throughput and reduced production times, benefiting the overall productivity of the dairy industry in Vietnam. Biotechnological advancements have made

enzyme production more sustainable and eco-friendlier. Techniques such as green chemistry and the use of renewable raw materials minimize environmental impact, aligning with global sustainability trends. This eco-friendly approach appeals to environmentally conscious consumers and regulatory bodies, enhancing the marketability of enzyme-enhanced dairy products and fostering a positive brand image for producers.

Cutting-edge genetic engineering techniques, including CRISPR and gene editing, allow for the precise modification of microbial strains used in enzyme production. This results in enzymes with enhanced activity, stability, and adaptability to various dairy processing conditions. For Vietnamese dairy producers, these genetically optimized enzymes can lead to significant improvements in the efficiency and quality of their products. Technological progress in enzyme research opens new avenues for product innovation. Enzymes that facilitate the production of functional dairy products, such as those enriched with bioactive peptides or those with improved digestibility, cater to the growing demand for health-oriented food products. This innovation not only meets consumer preferences but also enables producers to command premium pricing and differentiate their offerings in a competitive market. Technological advancements in enzyme production are a key driver of the Vietnam Dairy Enzymes Market. By enhancing enzyme efficacy, reducing production costs, improving stability, offering customized solutions, streamlining processes, supporting sustainability, leveraging genetic engineering, and fostering product innovation, these advancements significantly bolster the efficiency, quality, and competitiveness of the Vietnamese dairy industry. Consequently, they create a robust foundation for market growth, meeting the evolving needs of both producers and consumers.

## Key Market Challenges

### Regulatory Constraints and Compliance Issues

Navigating regulatory frameworks and ensuring compliance with food safety standards present significant challenges for players in the Vietnam Dairy Enzymes Market. The regulatory landscape in Vietnam can be complex and subject to frequent updates, requiring considerable resources and expertise to stay abreast of changes. Ensuring that dairy enzymes meet stringent safety and quality standards adds an additional layer of complexity to product development and market entry. Non-compliance with regulatory requirements can lead to market entry barriers, product recalls, and reputational damage, hampering market growth.

## Limited Awareness and Understanding of Enzyme Technology

A lack of awareness and understanding of enzyme technology among dairy industry stakeholders poses a notable challenge to market growth. Many dairy producers in Vietnam may not fully comprehend the benefits and applications of enzyme technologies in enhancing product quality, efficiency, and profitability. This limited awareness may result in reluctance to adopt enzyme-based solutions or underutilization of enzyme technologies in dairy processing operations. Educating stakeholders about the advantages and best practices associated with enzyme usage is essential to overcoming this challenge and driving market expansion.

## Cost Sensitivity and Price Pressures

Cost sensitivity and price pressures within the dairy industry present significant challenges for enzyme manufacturers and suppliers. Vietnamese dairy producers operate in a highly competitive market environment where margins are often tight, and price competitiveness is paramount. Enzyme-enhanced dairy products may command higher production costs due to the expenses associated with enzyme procurement, formulation, and application. However, market dynamics and consumer preferences may not always allow for passing these additional costs onto end-users. Balancing the need to deliver value-added products with cost considerations poses a persistent challenge for market players seeking to expand their footprint in the Vietnam Dairy Enzymes Market.

## Key Market Trends

### Increasing Demand for Health-Enhancing Enzyme Solutions

A notable trend shaping the future of the Vietnam Dairy Enzymes Market is the rising demand for health-enhancing enzyme solutions. With growing awareness of health and wellness among consumers, there is a heightened interest in dairy products that offer functional benefits beyond basic nutrition. Enzyme-modified dairy products, such as lactose-free milk, probiotic yogurt, and enzyme-fortified cheese, are gaining popularity due to their digestive health benefits and improved nutrient absorption. As consumers prioritize health-conscious choices, dairy producers are likely to invest in enzyme technologies that enable the development of products tailored to meet these evolving demands, thus driving market growth.

### Adoption of Advanced Enzyme Formulations for Product Differentiation

Another key trend driving the future growth of the Vietnam Dairy Enzymes Market is the adoption of advanced enzyme formulations for product differentiation. In an increasingly competitive market landscape, dairy producers are seeking innovative ways to distinguish their offerings and capture consumer attention. Advanced enzyme technologies allow for the development of unique dairy products with superior sensory attributes, extended shelf life, and enhanced nutritional profiles. From enzyme-assisted cheese aging to flavor modulation in yogurt, these specialized formulations enable product differentiation and premiumization, thereby fueling market expansion as consumers seek novel and high-value dairy experiences.

### Emphasis on Sustainable and Eco-Friendly Enzyme Production

A significant trend shaping the future trajectory of the Vietnam Dairy Enzymes Market is the emphasis on sustainable and eco-friendly enzyme production practices. With growing environmental concerns and regulatory scrutiny, there is a heightened focus on reducing the environmental footprint of dairy processing operations. Enzyme manufacturers are increasingly adopting sustainable production methods, such as utilizing renewable energy sources, optimizing water usage, and implementing green chemistry principles. Additionally, advancements in enzyme engineering and fermentation technologies enable the development of eco-friendly enzyme formulations with reduced resource consumption and waste generation. As sustainability becomes a key driver of consumer purchasing decisions, dairy producers are likely to prioritize enzyme suppliers that offer environmentally responsible solutions, driving market growth for sustainable enzyme technologies.

### Segmental Insights

#### Application Insights

Based on the category of Application, the Milk & Milk-based Products segment emerged as the dominant player in the Vietnam market for Dairy Enzymes in 2023. Milk and milk-based products hold a central place in the Vietnamese diet, cherished by individuals across urban and rural landscapes. They serve as versatile ingredients, utilized in beverages, culinary creations, and an array of dairy delicacies like yogurt, cheese, and ice cream. This enduring preference for milk products fuels the demand for enzyme applications in milk processing, ensuring superior quality, prolonged shelf life, and enhanced nutritional value. The milk segment boasts a diverse portfolio, encompassing fresh milk, flavored varieties, condensed milk, powdered alternatives, and a myriad of



milk-based beverages. Each category necessitates precise enzyme interventions to achieve desired attributes such as texture, taste, and stability. Enzymes play a pivotal role in critical milk processing procedures, including lactose hydrolysis, milk protein manipulation, and flavor augmentation, facilitating the production of a wide spectrum of milk offerings tailored to evolving consumer tastes.

Driven by burgeoning disposable incomes and evolving preferences, there's an escalating appetite for value-added milk products that deliver added health benefits and flavor dimensions. Enzyme technologies pave the way for lactose-free alternatives catering to lactose-intolerant individuals, milk fortified with essential vitamins and minerals, and flavored variants enriched with heightened sensory appeal. These value-added offerings resonate with diverse consumer preferences, propelling growth within the milk segment. Advancements in dairy processing technologies have ushered in a new era of innovation, leveraging enzyme applications to unlock novel milk product possibilities. Cutting-edge techniques such as ultra-high-temperature (UHT) processing, membrane filtration, and enzymatic enhancements empower dairy producers to craft milk products boasting extended shelf life, elevated nutritional profiles, and enriched sensory experiences. These technological strides bolster the competitive edge of milk products in the market, solidifying the milk segment's dominance within the Vietnam Dairy Enzymes Market landscape. These factors are expected to drive the growth of this segment.

## Regional Insights

South Vietnam emerged as the dominant region in the Vietnam Dairy Enzymes market in 2023, holding the largest market share in terms of value. South Vietnam boasts a substantial share of the nation's dairy processing infrastructure, encompassing milk collection centers, farms, and production plants. The region benefits from favorable climatic conditions, abundant agricultural resources, and strategic proximity to major urban hubs, facilitating the establishment and efficient operation of dairy facilities. This concentration of infrastructure fuels a robust demand for dairy enzymes, essential for optimizing production processes, elevating product quality, and satisfying market needs. Densely populated urban centers like Ho Chi Minh City, Bien Hoa, and Can Tho characterize South Vietnam, experiencing a surge in dairy product demand amid urbanization trends. Evolving lifestyles, escalating disposable incomes, and heightened awareness of health and nutrition drive urban consumers towards dairy consumption as a daily dietary staple. Consequently, the demand for enzyme-enhanced dairy products surges in tandem with this urban dietary shift, propelling market expansion within the region.

Also, South Vietnam attracts significant investments from leading dairy industry players and multinational corporations, drawn to its strategic significance and market potential. These entities deploy substantial resources towards establishing cutting-edge dairy processing facilities, spearheading research and development endeavors, and executing targeted marketing initiatives. Leveraging their expertise and infrastructural capabilities, these industry giants propel the adoption of enzyme technologies, driving innovation and product differentiation. This concerted effort further solidifies South Vietnam's dominance in the dairy enzymes market landscape.

### Key Market Players

The Dow Chemical Company

Novozymes A/S (Novonesis Group)

DSM

Phytozymes

Caldic B.V.

SternEnzym GmbH &Co. KG

### Report Scope:

In this report, the Vietnam Dairy Enzymes Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Vietnam Dairy Enzymes Market, By Type:

Lactase

Chymosin

Microbial Rennet



Lipase

Others

Vietnam Dairy Enzymes Market, By Application:

Milk

Cheese

Ice-Cream & Desserts

Yogurt

Whey

Infant Formula

Others

Vietnam Dairy Enzymes Market, By Source:

Plant

Animal & Microorganisms

Vietnam Dairy Enzymes Market, By Region:

South Vietnam

North Vietnam

Central Vietnam

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Vietnam Dairy Enzymes Market.

*Vietnam Dairy Enzymes Market, By Type (Lactase, Chymosin, Microbial Rennet, Lipase and Others), By Application...*

#### Available Customizations:

Vietnam Dairy Enzymes market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

#### Company Information

Detailed analysis and profiling of additional market players (up to five).

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