

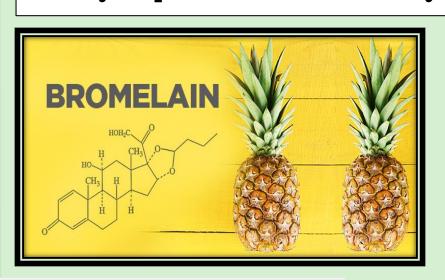
# Bromelain Enzyme Production from Pineapple Stems.

## Bromelain Extraction from Pineapple Fruit



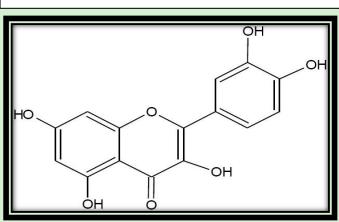
#### Introduction

Bromelain is a mixture of enzymes derived from pineapple. Its effects are mainly a product of its proteolytic activity, which stimulates fibrinolysis by increasing plasmin, but bromelain also has been shown to prevent kinin production and to inhibit platelet aggregation. Because its mechanism of action is generally antiinflammatory, rather than specific to a particular disease process, bromelain is used to treat a variety of pain and inflammatory conditions.





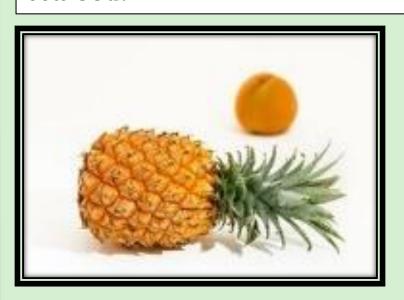
Derived from the pineapple plant, the bromelain enzyme finds various applications across different end-use industries. At the industrial level, bromelain is used to digest proteins. The proteolytic nature of bromelain finds application in the F&B industry where bromelain is largely used as a meat tenderizer. With added benefits such as antiinflammation and immunity boosting properties, bromelain is being increasingly used in dietary supplements. Bromelain also finds application as a viable solution to several energy and resource consuming processes in industries such as leather and paper processing.





www.entrepreneurindia.co

This digestive enzyme is extracted from pineapple fruit & stem and is used in numerous industries including healthcare, meat & seafood, dietary supplements, cosmetics, bakery and beverage. Globally, meat & seafood industry is found to be the largest end user industry for this market where its main application is to improve tenderness of meat & seafood.





#### **Market Outlook**

The global bromelain market is anticipated to reach USD 1,055.1 million by 2025, at a 4.60% CAGR over the forecast period (2018-2025), as per Market Research Future (MRFR). The market can accumulate a demand of 579,958.3 kg by 2025, at a CAGR of 6.54% during the forecast period.

The Food & Beverages and Pharmaceuticals industries have the largest applications of bromelain for several processes. Both these segments are collectively expected to hold more than 85% of the global bromelain market share throughout the forecast period 2017 – 2025. Increasing application of bromelain in the bakery, meat, and brewing industry is likely to boost revenue growth of the F&B segment during the period of assessment.

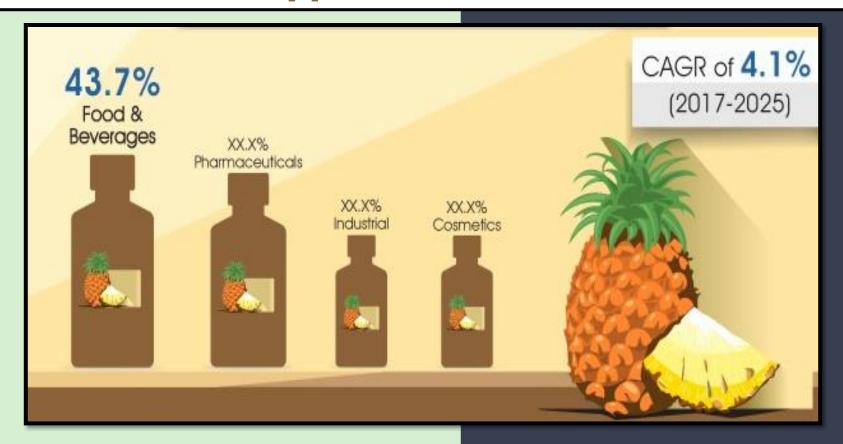


The Food & Beverages segment is estimated to represent an absolute \$ opportunity of US\$ 11.6 Mn in 2017 over 2016, and an incremental \$ opportunity of US\$ 129.6 Mn between 2017 and 2025. The Pharmaceuticals segment is estimated to represent an absolute \$ opportunity of US\$ 10.0 Mn in 2017 over 2016, and an incremental \$ opportunity of US\$ 102.9 Mn between 2017 and 2025.





## Global Bromelain Market Value Share (%), By Application (2017)





## Bromelain finds increasing application across the following end-use industries:

- Food & Beverages: Meat processing, dough relaxer, anti-browning agent, dairy processing, brewing process, etc.
- Pharmaceuticals: Anti-inflammatory drugs, burn recovery ointments, blood thinning, post-surgery medication, dermatological solutions, etc.
- Industrial: Detergent agent, paper processing, leather processing,
   silk extraction, animal feed and pet food preparations, etc.
- Cosmetics: Skin conditioner, anti-tan products, anti-infection agent, anti- aging solution, etc.

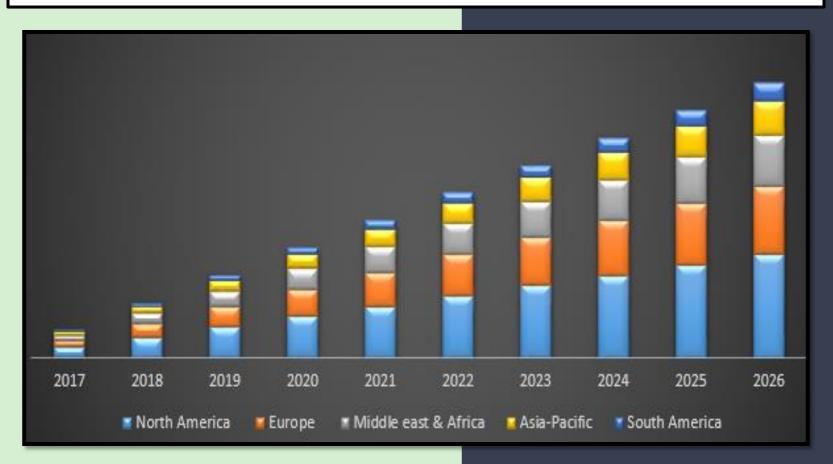


Growing demand from various end-use industries such as household care, animal feed, textile industry, etc., due to its properties is key factor expected to drive growth of the global bromelain market. Moreover, bromelain can be used for production of dietary supplement, as tenderizing meat agent, which is expected to boost demand for bromelain and thereby drive growth of the global market. Increasing demand of the bromelain and usage of natural products for production in various industries is also spurring demand for bromelain.

The Bromelain has its inherent properties to tenderize meat helps to reduce post process preparation time and reduces production costs considerably. This is expected to boost market demand for the enzyme in the forecast period.



#### Global Bromelain Market, By Region





Geographically, North America is expected to dominate the global bromelain market during the forecast period. This is mainly because of the rising awareness among the people regarding several health benefits of bromelain. Apart from this, increasing investments on research and development of healthcare sector in the region is another strong factor expected to drive the bromelain market in the region.

Some of the key players operating in the bromelain market are Enzybel International SA Hong Mao Biochemicals Co., Ltd, Nanning Pangbo Biological Engineering Co., Ltd, Great Food Group of Companies Enzyme Technology (PTY) Ltd, Guangxi Nanning Javely Biological Products Co., Ltd and Nanning Doing-Higher Bio-Tech Co., Ltd.



## Major Queries/Questions Answered in the Report?

- 1. What is Bromelain Enzyme Manufacturing industry?
- 2. How has the Bromelain Enzyme Manufacturing industry performed so far and how will it perform in the coming years?
- 3. What is the Project Feasibility of Bromelain Enzyme Manufacturing Plant?
- 4. What are the requirements of Working Capital for setting up Bromelain Enzyme Manufacturing plant?



- 5. What is the structure of the Bromelain Enzyme Manufacturing Business and who are the key/major players?
- 6. What is the total project cost for setting up Bromelain Enzyme Manufacturing Business?
- 7. What are the operating costs for setting up Bromelain Enzyme Manufacturing plant?
- 8. What are the machinery and equipment requirements for setting up Bromelain Enzyme Manufacturing plant?



- 9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Bromelain Enzyme Manufacturing plant?
- 10. What are the requirements of raw material for setting up Bromelain Enzyme Manufacturing plant?
- 11. Who are the Suppliers and Manufacturers of Raw materials for setting up Bromelain Enzyme Manufacturing Business?
- 12. What is the Manufacturing Process of Bromelain Enzyme from Pineapple Stems?



- 13. What is the total size of land required for setting up Bromelain Enzyme Manufacturing plant?
- 14. What will be the income and expenditures for Bromelain Enzyme Manufacturing Business?
- 15. What are the Projected Balance Sheets of Bromelain Enzyme Manufacturing plant?
- 16. What are the requirement of utilities and overheads for setting up Bromelain Enzyme Manufacturing plant?
- 17. What is the Built up Area Requirement and cost for setting up Bromelain Enzyme Manufacturing Business?



- 18. What are the Personnel (Manpower) Requirements for setting up Bromelain Enzyme Manufacturing Business?
- 19. What are Statistics of Import & Export for Bromelain Enzyme?
- 20. What is the time required to break-even of Bromelain Enzyme Manufacturing Business?
- 21. What is the Break-Even Analysis of Bromelain Enzyme Manufacturing plant?
- 22. What are the Project financials of Bromelain Enzyme Manufacturing Business?



- 23. What are the Profitability Ratios of Bromelain Enzyme Manufacturing Project?
- 24. What is the Sensitivity Analysis-Price/Volume of Bromelain Enzyme Manufacturing plant?
- 25. What are the Projected Pay-Back Period and IRR of Bromelain Enzyme Manufacturing plant?
- 26. What is the Process Flow Sheet Diagram of Bromelain Enzyme Manufacturing project?



27. What are the Market Opportunities for setting up Bromelain Enzyme Manufacturing plant?

28. What is the Market Study and Assessment for setting up Bromelain Enzyme Manufacturing Business?

29. What is the Plant Layout for setting up Bromelain Enzyme Manufacturing Business?



# Table of Contents of the Project Report



#### **Our Detailed Project Report contains**

- Introduction
- Properties
- Uses & Applications
- List of Plant & Machineries
- Miscellaneous Items and Accessories
- Instruments, Laboratory Equipments and Accessories
- Electrification, Electric Load and Water
- Maintenance, Suppliers/Manufacturers of Plant and Machineries



- Process of Manufacture
- Flow Sheet Diagram
- List of Raw Materials
- Availability of Raw Materials
- Requirement of Staff & Labour
- Skilled & Unskilled Labour
- Requirement of Land Area
- Built up Area
- Plant Layout



#### **Project Financials**

•	Project at a Glance	Annexure	
•	Assumptions for Profitability workings	1	
•	Plant Economics	2	
•	Production Schedule	3	
•	Land & Building	4	
	Factory Land & Building		
	Site Development Expenses		



•	Plant & Machinery5		
	Indigenous Machineries		
	Other Machineries (Miscellaneous, Laboratory etc.)		
•	Other Fixed Assets6		
	Furniture & Fixtures		
	Pre-operative and Preliminary Expenses		
	Technical Knowhow		
	Provision of Contingencies		
•	Working Capital Requirement Per Month7		
	Raw Material		
	Packing Material		
	Lab & ETP Chemical Cost		
	Consumable Store		



•	Overheads Required Per Month and Per Annum
•	Salary and Wages9
•	Turnover Per Annum10
•	Share Capital11
	Equity Capital  Preference Share Capital



- Annexure 1 :: Cost of Project and Means of Finance
- Annexure 2 :: Profitability and Net Cash Accruals
- Revenue/Income/Realisation
- Expenses/Cost of Products/Services/Items
- Gross Profit
- Financial Charges
- Total Cost of Sales
- Net Profit After Taxes
- Net Cash Accruals



- Annexure 3 :: Assessment of Working Capital requirements
- Current Assets
- Gross Working Capital
- Current Liabilities
- Net Working Capital
- Working Note for Calculation of Work-in-process
- Annexure 4 :: Sources and Disposition of Funds



- Annexure 5 :: Projected Balance Sheets
- ROI (Average of Fixed Assets)
- RONW (Average of Share Capital)
- ROI (Average of Total Assets)
- Annexure 6 :: Profitability Ratios
- D.S.C.R
- Earnings Per Share (EPS)
- Debt Equity Ratio



• Annexure 7 :: Break-Even Analysis

- Variable Cost & Expenses
- Semi-Variable/Semi-Fixed Expenses
- Profit Volume Ratio (PVR)
- Fixed Expenses / Cost
- B.E.P



#### • Annexure 8 to 11 :: Sensitivity Analysis-Price/Volume

- Resultant N.P.B.T
- Resultant D.S.C.R
- Resultant PV Ratio
- Resultant DER
- Resultant ROI
- Resultant BEP



- Annexure 12 :: Shareholding Pattern and Stake Status
- Equity Capital
- Preference Share Capital
- Annexure 13 :: Quantitative Details-Output/Sales/Stocks
- Determined Capacity P.A of Products/Services
- Achievable Efficiency/Yield % of Products/Services/Items
- Net Usable Load/Capacity of Products/Services/Items
- Expected Sales/ Revenue/ Income of Products/ Services/
   Items



• Annexure 14 :: Product wise Domestic Sales

Realisation

• Annexure 15 :: Total Raw Material Cost

• Annexure 16 :: Raw Material Cost per unit

• Annexure 17 :: Total Lab & ETP Chemical Cost

• Annexure 18 :: Consumables, Store etc.

• Annexure 19 :: Packing Material Cost

• Annexure 20 :: Packing Material Cost Per Unit



•	Annexure 21	::	<b>Employees Expenses</b>
---	-------------	----	---------------------------

- Annexure 22 :: Fuel Expenses
- Annexure 23 :: Power/Electricity Expenses
- Annexure 24 :: Royalty & Other Charges
- Annexure 25 :: Repairs & Maintenance Expenses
- Annexure 26 :: Other Manufacturing Expenses
- Annexure 27 :: Administration Expenses
- Annexure 28 :: Selling Expenses



- Annexure 29 :: Depreciation Charges as per Books (Total)
- Annexure 30 :: Depreciation Charges as per Books (P & M)
- Annexure 31 :: Depreciation Charges as per IT Act WDV (Total)
- Annexure 32 :: Depreciation Charges as per IT Act WDV (P & M)
- Annexure 33 :: Interest and Repayment Term Loans
- Annexure 34 :: Tax on Profits
- Annexure 35 :: Projected Pay-Back Period and IRR



#### **Tags**

#Bromelain\_Enzyme\_from\_Pineapple\_Stems, #Extraction\_of\_Bromelain\_from\_Pineapple, #Bromelain, #Bromelain\_Enzyme\_from\_Pineapple, #Stem\_Bromelain\_Enzyme, Bromelain from Pineapple Stem, #Bromelain\_Enzyme\_Extraction\_from\_Pineapple, Bromelain Production in India, Bromelain Production, Bromelain Enzyme Pdf, Application of Bromelain, #Bromelain\_Production\_Process, How to Get Bromelain from a Pineapple, #Bromelain\_Production\_Business, Bromelain Content of Extract from Stem of Pineapple, Bromelain Production in India, Bromelain Pineapple Enzymes, Bromelain Manufacture, Bromelain Enzyme, Pineapple Enzyme Bromelain Manufacture, India Bromelain, India Bromelain Manufacture, Bromelain Extraction from Pineapple, Extraction of Bromelain from Fruit Waste, Extraction of Enzymes from Fruits, #Detailed\_Project\_Report\_on\_Bromelain\_Production, Project Report Bromelain Production, Pre-Investment Feasibility Study on Bromelain Production, Techno-Economic feasibility study on Bromelain Production, #Feasibility\_report\_on\_Bromelain\_Production, Free Project Profile Bromelain Production, Project profile on Bromelain Production, Download free project profile on Bromelain Production



Niir Project Consultancy Services (NPCS)
can provide Detailed Project Report on
Bromelain Enzyme Production
from Pineapple Stems.
Bromelain Extraction from
Pineapple Fruit

#### See more

https://bit.ly/33kY4YG https://bit.ly/2ThSOAC



#### Contact us

#### NIIR PROJECT CONSULTANCY SERVICES

106-E, Kamla Nagar, Opp. Spark Mall,

New Delhi-110007, India.

Email: <u>npcs.ei@gmail.com</u>, <u>info@entrepreneurindia.co</u>

Tel: +91-11-23843955, 23845654, 23845886, 8800733955

Mobile: +91-9811043595

Fax: +91-11-23845886

Website: www.entrepreneurindia.co, www.niir.org

Take a look at NIIR PROJECT CONSULTANCY SERVICES on #StreetView

https://goo.gl/VstWkd



### Follow us



> https://www.linkedin.com/company/niir-project-consultancy-services



>https://www.facebook.com/NIIR.ORG



**▶**<u>https://www.youtube.com/user/NIIRproject</u>



>https://plus.google.com/+EntrepreneurIndiaNewDelhi



>https://twitter.com/npcs\_in



https://www.pinterest.com/npcsindia/



## Thank You

For more information, visit us at:

www.niir.org

www.entrepreneurindia.co

