MULTICLIENT STUDY

Business Review

Starches & Derivatives - Supply/Demand/Forecasts

India

2015-2020

October 2016

Sectors



Bakery, Beverages
Confectionery
Textiles
Pharmaceuticals
Paper/Board
Construction
Foundry
Others



Market



India

GIRACT
Geneva, Switzerland

Transnational Business Research & Consultancy

Introduction



Starch is a major building block of modern industry and its production and use continue to expand unabated in areas with strong economic growth. A truly global business, the starch industry faces serious challenges trying to balance the large and mature markets of EU and USA with the young and rapidly expanding industries in rapidly developing countries. The key to the industry is the balance between the technical benefits of starches originating from different raw material and the availability and economic advantages of those raw materials in different areas.

The issue of price plays a more important role in the developing countries, and in the paper/board and textile sectors which have mostly moved over to the developing countries, petrochemical sourced synthetics thus have a strong competitive position vis-à-vis both native and modified starches.

The Indian starch industry has witnessed a large capacity expansion in the past few years. While raw material availability increase has played a part, it is the growth in demand driven by nearly all the key sectors – textile, paper and food - which has been a significant driver. China, which went through a similar capacity increase (although India can even now not stand up to the scale of capacity in China) is facing serious problems of underutilization and price pressure.

Introduction

Will India go through a similar cycle? Indicators point that until early last year, India would also be left with underutilized capacity until 2020.

Giract holds a leading position as a global business research and strategic consulting organisation with regard to starch industry. Giract's competence includes market insight reports covering the supply and demand of a wide range of starches and sweeteners across sectors and countries around the world, the latest being a global analysis of Starch & Derivatives Supply published in July 2015. An ecosystem of starch conferences, newsletters, and quarterly price monitoring reports rounds up Giract's expertise in the starch arena.

For more information, contact

V. Krishnakumar
GIRACT
24, Pré-Colomb
1290 Versoix/Geneva
Switzerland
Tel: + 41 22 779 0500
Email: info@giract.com; **Web**: www.giract.com

Objectives of this study

Starches & Derivatives – India



- To provide an in-depth understanding of players and products
- To examine the current relevant legislation and import duties
- To track the current production and trends of starch – native, modified and derivatives
- To establish price trends
- To obtain a firm understanding of the relevant market sizes for the end use sectors, industry structure and industry developments
- To forecast usage trends for starches and derivatives by type of starch and usage sector

This unique study examines supply/demand/forecasts of Starches & Derivatives in India

SCOPE

Sectors



- Native
- Modified (including resistant)
- Derivatives (polyols, glucose syrups, maltodextrin, dextrin)
- Key end-use sectors:
  - Bakery, Beverages
  - Confectionery
  - Textiles
  - Pharmaceuticals
  - Paper/Board
  - Construction
  - Foundry
  - Others

Markets



- India

STUDY HIGHLIGHT

Programme

Following an initial review of Giract in-house data, interviews with selected key players (producers, traders, end-users) have been carried out in order to derive real understanding of the market forces

Current: 2015
Forecast: 2020

Timescale



WHAT DO YOU GET?

1. **Electronic Copy** of report in searchable PDF format
2. **One Printed Copy**



3. Report published in **October 2016**

Draft Table of Contents



Starch and Derivatives

Supply/Demand/Forecasts

India

2015-2020

DRAFT REPORT

Summer 2016

GIRACT

Website: www.giract.com

Email: info@giract.com

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1. EXECUTIVE SUMMARY

1.1. MARKET INSIGHT SUMMARY
1.1.1. STARCHES
1.1.2. MODIFIED STARCHES
1.1.3. SUGARS AND OTHER SWEETENERS
1.2. LEGISLATION

This section will discuss about the government legislation on the starch and derivatives. The recent amendments by FSSAI for the use of modified starch will be covered under this section.

2. SUPPLY SCENARIO

Estimated Native starch. modified starch and derivatives production by producer, 2015 Kt

Company	Native Starch	Modified Starch	Liquid Glucose (DE 28-37)	Liquid Glucose (DE 38-58)	Liquid Glucose (DE 58-73)	Liquid Glucose (DE 73+)	High Maltose Corn Syrup	Maltodextrin	Dextrin	Dextrose Monohydrate	Dextrose anhydrous	Sorbitol	Other polyols	HFCS	Other
Gujarat Ambuja															
Shri Tradco Deesan Pvt Ltd															
Roquette Riddhi Siddhi															
Sukhjit Starch															
Gayatri Bioorganics															
Anil Ltd															
Maize Products															
Sharda Starch															
Cargill															
SNS Starch															
Vijaya Nagar Biotech															
Varalakshmi															
Sanstar															
Universal Starch															
Millenium															
Tirupathi Starch															
Rajaram Starch															
Sahyadri															
Santosh															
Siddhi Vinayak Agro															
SPAC															
Vedanth Starch															
Pioneer Industries															
Bharat Starch															

Blue Ocean Biotech
Sunanda Agro
Kashyap Sweetners
Gulshan Polyols
TOTAL

Source: Giract, based on interviews and analysis

Notes to be added here on producers, new expansions and expansion plans, production movement, news about the industry etc.#

Installed capacity of starch and sweeteners in India,2015 tpd

Company	2011-12	2012-13	2013-14	2014-15	2015-16	% Capacity Utilization (2015-16)	Likely Capacity addition
Gujarat Ambuja							
Shri Tradco Deesan Pvt Ltd							
Roquette Riddhi Siddhi							
Sukhjit Starch							
Gayatri Bioorganics							
Anil Ltd							
Maize Products							
Sharda Starch							
Cargill							
SNS Starch							
Vijaya Nagar Biotech							
Varalakshmi							
Sanstar							
Pioneer Industries							
Universal Starch							
Millenium							
Tirupathi Starch							
Rajaram Starch							
Sahyadri							
Santosh							

Company	2011-12	2012-13	2013-14	2014-15	2015-16	% Capacity Utilization (2015-16)	Likely Capacity addition
Siddhi Vinayak Agro							
SPAC							
Vedanth Starch							
Pioneer Industries							
Bharat Starch							
Blue Ocean Biotech							
Sunanda Agro							
Kashyap Sweetners							
Gulshan Polyols							
Total							

Source: Giract, based on interviews

this section will also discuss about any recent expansion plans in Starch and derivatives area in India#

2.1.1. AVAILABILITY

#The availability of starch and derivatives will be calculated based on the equation: Local Production+ Import- local consumption-exports#

Availability of starches and derivatives, India, 2015 kt

Sectors	Native Starch	Modified starch	Liquid Glucose (DE 28-37)	Liquid Glucose (DE 38-58)	Liquid Glucose (DE 58-73)	Liquid Glucose (DE 73+)	High Maltose Corn Syrup	Maltodextrin	Other dextrins	Dextrose monohydrate	Dextrose anhydrous	Sorbitol	Other polyols	HFCS	Others
Production															
Import															
Export															
Availability															

Source: Giract, based on interviews and analysis

add notes on availability here

3. PRICES

Starch and Its Derivatives prices	INR/kg
Product	Average
Native Starch	
Cationic Starch	
Oxidised Starch	
Amphoteric Starch	
One Shot Starch	
Pregel – Food	
Pregel – Pharma	
LG – Conf	
LG – SO_2 Free	
Thin Boiling Starch	
Malto Dextrin	
Starch IP/BP	
Caramel	
Sorbitol	
Glucose D	
Dex Mono Hydrate	
Dextrose Anhydrous-IP	
Dextrin – White	

Note: The list is indicative and not all prices will be presented herein

Notes to be added here on price movements, factors affecting price and news of note that might affect pricing

4. DEMAND OVERVIEW

4.1. END SECTORS OVERVIEW

Starch is one of the most popular biomaterials having diversified applications in the food and beverage, paper, pharmaceutical, textile and animal feed industries across the globe.

Although economic development and the rising standard of living have contributed to a significant rise in consumption of starch and related products by the non-food sector, the food industry has always remained the traditional sustainer for the global starch market. A multitude of promising developments and innovations in biotechnology are also poised to propel the demand for starch from the food industry.

In addition, usage of starch by food industry is being fuelled by the increasing number of government policies stipulating the usage of natural substances in food products.

The following key end segments for starch are discussed in this chapter:

- Food
  - Bakery (bread, cakes and biscuits)
  - Beverages (Beer, fruit drinks, soft drinks [fizzy and still])
  - Confectionery (chocolate, Sugar confectionery, Chewing gum)
  - Dairy (milk powder, dairy desserts, dairy based beverages)
  - Dry soup mixes
  - Food service
  - Ice cream
  - Baby food
  - Noodles
  - RTE, RTC
  - Sauces and spreads
  - Snacks
  - Vegetable powders / Spice
  - Other foods
- Paper
- Pharmaceuticals
- Textiles
- Oil drilling
- Adhesives
- Toothpaste/oral care
- Other Non-Food

4.2. FOOD

4.2.1. APPLICATIONS OVERVIEW

4.2.2. FOOD INDUSTRY BY SECTOR

4.2.2.1 BAKERY

The bakery industry is the largest among the processed food industries in India with significant growth rates. Bread and biscuits are the two major bakery segments and which account for about 82% of total bakery products.

Share of Segments in the Indian Baked Goods Market, 2015

Source: Giract, based on database and analysis

Different product types have different growth rates in the Indian bakery sector. This has got a lot to do with non-traditional nature of western style baked goods consumption.

Volume and growth rate of baked goods, India, 2015 kt

Type	2010	2015	CAGR 2010-15 (%)	2020	CAGR 2015-20 (%)
Breads					
Biscuits					
Cakes					

Source: Giract, based on database and analysis

Whether improving texture, reducing fat and sugar content or helping retain moisture in bakery products, by their nature, starches serve a variety of useful functions. Bakeries are increasingly looking to starch to deliver benefits that stretch beyond the fundamentals to include the enhancement of nutritional profiles and the reduction of overall costs.

Starches' ability to manage moisture in bakery products such as muffins, snack cakes and brownies makes them an important ingredient for maintaining shelf stability.

Typically starch is used in one of four physical forms: dry, swollen, molecular dispersion or dry film. When used in the dry state or ungelatinized granular form, starch typically serves as a dusting agent, as in coating bakery products to provide easy release from pans after removal from the oven.

In bread making, starch is a major component and plays an important role in texture and quality of dough and bread. Therefore, modified starches, which were developed to decrease undesirable properties of native starches, also affect the properties of dough and quality of bread. The modified starches could be used to substitute up to 20% for wheat flour without deterioration of bread quality. However, vital gluten is also needed to blend with the substituted modified starches to improve loaf volume of bread.

Modified starches are used in bakery fillings and toppings to get right consistency so that the fillings will not react with the base and make it soggy and the fillings dose not settle at the bottom.

4.2.2.2 BEVERAGES

to be repeated as above including sub-sector level information for beer, fruit drinks, soft drinks (fizzy and still)

4.2.2.3 CONFECTIONERY

to be repeated as above including sub-sector level information for Chocolate, sugar confectionery and chewing gum

4.2.2.4 DAIRY

to be repeated as above including sub-sector level information for milk powder, dairy desserts, dairy based beverages and cheese

4.2.2.5 DRY SOUP MIXES

4.2.2.6 FOOD SERVICE

4.2.2.7 ICE CREAM

4.2.2.8 BABY FOOD

4.2.2.9 NOODLES

4.2.2.10 RTE/RTC MEALS

4.2.2.11 SAUCES AND SPREADS

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4.5. TEXTILES
4.5.1. OVERVIEW OF TEXILE INDUSTRY

India is one of the world's largest producers of textiles and garments. The potential size of the Indian textile and apparel industry is expected to reach USD 223 bio by 2021.

The textile industry has made a major contribution to the national economy in terms of direct and indirect employment generation and net foreign exchange earnings. The sector contributes about 14% to industrial production, 4% to the gross domestic product (GDP), and 17% to the country's export earnings. It provides direct employment to over 35 mio people. The textile sector is the second largest provider of employment after agriculture. Thus, the growth and all round development of this industry has a direct bearing on the improvement of the economy of the nation.

4.5.2. STARCH APPLICATIONS

Starch is an important raw material for the textile industry, finding applications in sizing, finishing, and printing.

Small amounts of native starch are used as thickeners in printing inks, and modified starches (oxidised starches) are used to increase the weight and stiffness of finished fabrics, and for application of glossy finishes. However, the main application for textile grade native starch is in sizing of the yarn for weaving. In the weaving process a solution of starch paste is applied to the yarn to improve its strength and flexibility, and thus prevent breakage of individual threads on the looms. The amount of starch required will depend on the viscosity of the starch and weight of the yarn, but it is usually in the range of 5 to 15% of the weight of the yarn.

Approximately 80% of the starch used in textiles is used in sizing where individual fibres of yarn must be shaped or formed into a warp that passes through a sizing solution that coats the surface of the twisted warp. The coated warp is then heated to dry and is ready for weaving.The function of starch in sizing is to form a bond to the fibre, penetrating the fibre bundle to some extent and to bind enough water to avoid that too much water is absorbed by the fibre itself. It also improves the resistance of the yarn to abrasion and its flexibility.

Finishing is the transformation of grey goods from the loom to a finished product that is attractive to the consuming public. It includes the process of covering blemishes or defects that may be in the yarn.

Textile printing, or the impression of a design on fabrics, requires a carrier for the dyes and pigments and modified starches have found special uses in these applications. Printing pastes are high viscosity media that preferably will not change on ageing and will resist the effect of added acids or alkalis as required by colour agents. A sharp image is required and this requires a short non stringy paste. Modified starches are frequently mixed with other industrial gums to give the required viscosity and paste characteristics.

Glass fibre sizing is a special case among textile fibre sized with starches. Partially cooked up starches are used because they have high film strength and thus form a good film. The characteristic of dispersion instability appears to be one of the more desirable properties. This property is ideally found in cross-linked starches, maize, potato or high amylose varieties, as well as some cationic starches. Although most of the glass-sized yarn goes into fabric uses, a portion is used for electrical insulation and in circuit boards.

4.5.3. CAPACITY AND PRODUCTION

The Indian textile industry is one of the largest textile industries in the world and India earns around 27% of the foreign exchange from exports of textiles and related products. The textiles and garment industry is the second-largest employer in India after agriculture. India exports about 50% of the total production of textiles and garments, of which 60% is exported to the US and the European Union countries.

trends of Indian textile industry to be included##

Production of cloth in the different sectors **units**

Sector	2005	2006	2007	2008	2009	2011	2012	2013	2015
Mill									
Handloom									
Power-loom									
Hosiery									
Total									

Source: Giract, based on databases and analysis

4.6. PHARMACEUTICALS

4.7. OIL DRILLING

4.8. TOOTHPASTE/ORAL CARE

4.9. OTHER NON-FOOD

4.9.1. AYURVEDA

4.9.2. POULTRY AND ANIMAL FEED

4.9.3. FIREWORKS

4.9.4. FOUNDRY

4.9.5. PERSONAL CARE/ COSMETICS

4.10. TOTAL DEMAND FOR STARCHES

Total Demand for starches and derivatives, India, 2015 kt

Source: Giract, based on interviews and analysis

Sectors	Native Starch	Modified starch	Liquid Glucose (DE 28-37)	Liquid Glucose (DE 38-58)	Liquid Glucose (DE 58-73)	Liquid Glucose (DE 73+)	High Maltose Corn Syrup	Maltodextrin	Other dextrins	Dextrose monohydrate	Dextrose anhydrous	Sorbitol	Other polyols	HFCS	Others
Textile															
Paper															
Pharmaceuticals															
Oil Drilling															
Adhesives															
Toothpaste/Oral care															
Other non-food															
Total Food															
Bakery															
Beverages															
Confectionery															
Dairy															
Dry soup mixes															
Food service															
Ice cream															
Baby food															
Noodles															
RTE, RTC															
Sauces and spreads															
Snacks															
Vegetable powders / Spice															
Other foods															
TOTAL															

Forecast demand for starches and derivatives, India, 2020 kt

Textile
Paper
Pharmaceuticals
Oil Drilling
Adhesives
Toothpaste/Oral care
Other non-food
Total Food
Bakery
Beverages
Confectionery
Dairy
Dry soup mixes
Food service
Ice cream
Baby food
Noodles
RTE, RTC
Sauces and spreads
Snacks
Vegetable powders / Spice
Other foods
TOTAL

Source: Giract, based on interviews and analysis

4.11. DEMAND IN KEY STATES

4.11.1. GUJARAT

Current and forecast demand for starches and derivatives, Gujarat-India, 2015-20

kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Gujarat as a starch and derivatives consumer

4.11.2. TAMIL NADU

Current and forecast demand for starches and derivatives, Tamil Nadu-India, 2015-20

kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Tamil Nadu as a starch and derivatives consumer

4.11.3. MAHARASHTRA

Current and forecast demand for starches and derivatives, Maharashtra-India, 2015-20 kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Maharashtra as a starch and derivatives consumer

4.11.4. KARNATAKA

Current and forecast demand for starches and derivatives, Karnataka-India, 2015-20 kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Karnataka as a starch and derivatives consumer

4.11.5. MADHYA PRADESH

Current and forecast demand for starches and derivatives, Madhya Pradesh-India, 2015-20 kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Madhya Pradesh as a starch and derivatives consumer

4.11.6. ANDHRA PRADESH (SEEMANDHRA+TELENGANA)

Current and forecast demand for starches and derivatives, Andhra Pradesh-India, 2015-20 kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Andhra Pradesh as a starch and derivatives consumer

4.11.7. REST OF INDIA

Current and forecast demand for starches and derivatives, Rest of India-India, 2015-20 kt

Sector	2015	2020	CAGR (%)
Textile			
Paper			
Pharmaceuticals			
Oil Drilling			
Adhesives			
Toothpaste/Oral care			
Other non-food			
Total Food			

Source: Giract, based on interviews and analysis

Notes to be added here on Rest of India as a starch and derivatives consumer

5. COST OF PRODUCTION

Indicative production cost per ton of Native starch will be provided. This section will also give the trend of starch margin

Cost of production of native starch (600 TPD CWM), India, 2015

Particulars	Amount (INR)
Maize	
Fuel	
Electricity	
Chemicals	
Salary	
Packing material	
Maintenance	
Miscellaneous	

Source: Giract, based on analysis

6. DEMAND PERSPECTIVES

6.1. SUMMARY OF DEMAND PERSPECTIVES

Company	Key comments

6.1.1. COMPANY 1

Company Address
Tel: + 41
Fax: + 41
Website:

Company background and relevant products

Company introduction (products, turnover, employees, geographical spread...) – this information can be obtained from the website/internet

In which countries does the company sell and what is its market share?

Key relevant products and quantities of relevant end-products (Paper, textile, food etc..) produced

Starch buying patterns

- Type of starch purchased (along with % split)
- Raw materials source for starch (corn, tapioca, etc)
- Supplier information
- Pricing and quantity purchased per year
- Issues pertaining to the supply chain of starch
- Any changes in starch buying patterns as compared to previous years?

Starch use patterns

- Products in which various types of starch is used (along with split ups of types of starch)
- Purpose of using starch in end-products
- Factors affecting the use of starch in the end-products
- Which type of starch is more preferred in a particular sector?
- Are the volumes used increasing or decreasing; if so, by how much (%), and why?
- Any changes in starch use patterns as compared to previous years?
- Any changes in customer preferences pertaining to starch use?
- Are there any competitive ingredients for starch? What is the impact of competitive ingredient use on the starch usage? Factors affecting the choice of competitive ingredients in comparison to starch in a particular end-use sector?

Other issues

- How is the growth forecast for various types of starch in future (in %), and the reasons
- How are the trends pertaining to starch usage foreseen for future (for next 4 to 5 years)?

7. ANNEX

7.1. LIST OF KEY CUSTOMERS

Companies	Liquid Glucose	Native Starch	Maltodextrin	Dextrose Monohydrate	Pregelatinized starch	DextroseAnhydrous
Ravi Foods						
Britannia						
Prayag Nutrine						
Gandour Confectionery						
Dolphin Foods						
ITC						
GTN Industries						
Srikara Parenterals						
Veeramani Biscuits						
Target Foods						
Sample Nutrition						
Nutrine Confectionery						
AP Paper						
Stardex						
Hari Krishna Paper						
Dr Reddys						
Arobindo						
Natco						
Granules India						
Vertiza						
Heritage Foods						
Glaxo SmithKline						
Yummy Foods						
Unibic						
Total						

Source: Giract based on interviews and analysis

7.2. QUALITY PARAMETERS FOR STARCH AND DERIVATIVE PRODUCTS

Liquid Glucose

Parameters	Limits
Description	
% Moisture	
DE	
% sulphated Ash	
% total ash	
% Acidity	
Arsenic	
SO2	
Copper	
Lead	
Total Plate count	
Yeast and moulds	

Source: Giract, based on analysis

To be repeated for other products covered in the study