

# **Production of Sugar Alcohols in China**

**The Third Edition  
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## **Executive summary**

Sugar alcohol industry is a branch of corn deep processing industry. With the advantages of high safety, low calories and low GI (glycemic index) value, sugar alcohols have become more and more popular.

Generally speaking, sugar alcohol industry in China experienced fine development in the past five years, with higher recognition and wider applications.

## **Production**

In 2016–2020, different changes were recorded in the capacity of the five products:

- Erythritol enjoyed rapid growth, with a CAGR of 32.1%.
- Xylitol experienced increase with a CAGR of 6.2%.
- Maltitol and mannitol witnessed slight fluctuations.
- Sorbitol saw a decline, falling from 1,718,000 t/a in 2016 to 1,597,000 t/a in 2020, with a CAGR of -1.8%.

The total output of these major sugar alcohols increased from 1,165,500 tonnes in 2016 to 1,444,400 tonnes in 2020, with a CAGR of 5.5%.

## **Price**

Prices of most sugar alcohol products declined in 2016, mainly caused by the dropping corn price and overcapacity. Then in 2017, prices rebounded due to the rising corn price, decreased supply, along with the increasing demand. In 2018–2019, prices witnessed fluctuations, attributed to the changing supply-demand dynamics. Affected by shrinking demand under COVID-19, prices declined in H1 2020. Since H2 2020, they rebounded and continued to go up, driven by higher corn prices and increasing downstream demand, but prices of some products dropped due to slight decreases in corn price starting from Feb. 2021.

## **Introduction and methodology**

### **Introduction**

This report presents the development of sugar alcohols in China from 2016 to 2020, together with the production situation of sorbitol, maltitol, xylitol, mannitol and erythritol. It attaches importance to the following parts.

- Annual review of hot spots in China's sugar alcohols industry in 2018–2020
- Capacity and output in China, 2016–2020
- Major producers and distribution in China, 2016–2020
- Monthly ex-works price, Jan. 2016–June 2021

### **Methodology and source**

The report is based on data sourced by diverse methods, which are listed as follows:

- Desk research

Desk research includes access to published magazines, journals, government statistics, industry statistics, customs statistics, association seminars as well as information on the Internet. Much work has gone into the compilation and analysis of the information obtained. When necessary, information has been checked and discussed internally related to market structure and performance characteristics, such as key producers, key end users, production levels, demand from end users.

- Telephone interview

CCM has conducted extensive telephone interviews with major participants in the industry in order to research the sugar alcohol market in China.

The interviewees include the following groups:

- Key producers
- Key traders
- Associations involved
- Industry experts

- Network search

CCM employs network to contact industry participants by using B2B websites and software.

- Data processing and presentation

The data collected and compiled was variously sourced from:

- CCM's database
- Published articles from periodicals, magazines, journals and third-party databases
- Statistics from governments and international institutes
- Telephone interviews with domestic producers, joint ventures, service suppliers and government agencies
- Third-party data providers
- Customs statistics

The data has been combined and cross-checked to ensure that this report is as accurate and methodologically sound as possible. Throughout the process, a series of discussions were held within CCM to systematically analyse the data and draw appropriate conclusions.

- Unit and abbreviation

RMB: currency unit in China, also called Yuan

USD: currency unit in the US, also called US dollar

tonne: equals to metric ton in this report

t/a: tonne/annual or tonne/year

/t: per tonne

CAGR: compound annual growth rate

Table USD/CNY exchange rate, Jan. 2016–Nov. 2021

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly average
2016	6.5527	6.5311	6.5064	6.4762	6.5315	6.5874	6.6774	6.6474	6.6715	6.7442	6.8375	6.9182	6.6425
2017	6.8918	6.8713	6.8932	6.8845	6.8827	6.8019	6.7772	6.7148	6.5909	6.6493	6.6300	6.6067	6.7662
2018	6.5079	6.3045	6.3352	6.2764	6.3670	6.4078	6.6157	6.8293	6.8347	6.8957	6.9670	6.9431	6.6070
2019	6.8482	6.7081	6.6957	6.7193	6.7344	6.8896	6.8716	6.8938	7.0883	7.0726	7.0437	7.0262	6.8826
2020	6.9614	6.9249	6.9811	7.0771	7.0690	7.1315	7.0710	6.9980	6.8498	6.7796	6.7050	6.5921	6.9284
2021	6.5408	6.4623	6.4754	6.5584	6.4895	6.3572	6.4709	6.4660	6.4680	6.4604	6.4192	-	-

Source: The People's Bank of China

## 1 Overview

As natural and low-calorie sweeteners, sugar alcohols are highly recognized and widely used in food, pharmaceutical and chemical industries. In recent years, sugar alcohol industry has maintained a good momentum, with improved production technology and expanded application fields. However, there were still some problems during its development, such as excessive capacity and low capacity utilization.

Higher concentration was witnessed in sugar alcohol industry during 2016 to 2020. On one hand, due to rising cost, rigorous environmental inspection and sometimes poor operation, some small producers left the industry. On the other hand, in spite of overcapacity, some large-scale producers expanded their capacity and new comers joined the market seeing promising future.

In the past five years, the development of sorbitol, xylitol, mannitol and maltitol slowed down, while erythritol, a zero-calorie sweetener, witnessed a rapid development stimulated by the rising demand from sugar-free beverages in recent years.

Opportunities and challenges coexist in the future market of sugar alcohols. For one thing, driven by the global trend of sugar reduction, demand from downstream sectors is expected to increase further. For another, sugar alcohol industry is still facing the challenge of overcapacity. In addition, other natural sweeteners, such as stevia and mogroside, also enjoyed fast growth benefited from the increasing popularity of low-sugar diet. In this context, it is necessary for sugar alcohol producers to improve competitiveness through technical innovation and cost reduction.

## 2 Hot spots of sugar alcohol industry in China, 2018–2020

### Governmental direction

**On 12 May 2020**, the Customs Tariff Commission of the State Council issued the Notice Concerning the Second Exclusion from the Second Batch of Additional Tariffs on US Imports. From 19 May 2020 to 18 May 2021, China excluded 79 products from additional tariffs imposed on US imports as countermeasures to US Section 301 measures. Among them, sorbitol (HS code 29054400) was included.

**On 9 May, 2019**, the US government broke previous agreement with China, unilaterally declaring to raise tariffs on USD200 billion worth of Chinese products from 10% to 25%. As a countermeasure to this provocation, China imposed higher tariffs on USD60 billion worth of US goods from 1 June, 2019, some sugar alcohols included.

**Previously, on 24 Sept., 2018**, China imposed 10% or 5% tariffs on about USD60 billion worth of US commodities across 5,207 items also covering some sugar alcohols. In comparison, tariffs on xylitol remained at 5%; tariffs on sorbitol (HS code 29054400), sorbitol (HS code 38246000) increased from 5% to 10%; tariffs on mannitol mounted from 10% to 25%.

### Market dynamics

**On 6 March, 2018**, Zhejiang NHU Co., Ltd. permitted its subsidiary Heilongjiang NHU Biotechnology Co., Ltd. (Heilongjiang NHU) to use self-raised fund for bio-fermentation project, promising 60,000 t/a sorbitol (70%) production lines. On 15 Oct., 2020, the lines were officially put into operation.

**On 22 April, 2018**, Shandong Tianli Pharmaceutical Co., Ltd. (Shandong Tianli) signed a contract with Singapore Sutar Sci-Tech Investment Co., Ltd. on the 210,000 t/a sugar alcohol project. With a total investment of USD77.19 million (RMB510 million), the project would include the production capacity of 200,000 t/a of sorbitol and 10,000 t/a of trehalose. On 19 April, 2020, the sorbitol production lines were successfully put into operation at first try, and on 20 Dec., 2020, the project passed the self-inspection and acceptance of environmental protection.

**In June 2018**, Harbin Yimei Bioengineering Technology Co., Ltd. (Harbin Yimei) introduced in Yilan County, Heilongjiang Province the bio-fermentation technology of extracting xylitol. A US-based biotechnology enterprise had developed a kind of microbial fermentation bacteria, which, kept in liquid nitrogen, could convert the fermented xylose of corncobs into xylitol. Ten tonnes of corncobs could produce one tonne of xylitol. Besides, Harbin Yimei started construction of 10,000 t/a of xylitol project in July 2018; the project was put into trial operation in Oct. 2018 and commercial operation in 2019.

**In Oct. 2018**, Yusweet Xylitol Technology Co., Ltd. (Yusweet Xylitol)'s 20,000 t/a of xylitol project with a total investment of USD52.97 million (RMB350 million) was approved. The project was completed by the end of 2020 and finished self-inspection and acceptance of environmental protection in March 2021.

**On 7 Jan., 2019**, Zibo Zhongshun Biotechnology Co., Ltd. put its functional sugar contract out to tender. In 2019, it made two announcements on the results of the environmental impact assessment (EIA) of the project, with the first one in Aug. and the second in Nov. About the project:

- Investment: USD30.66 million (RMB211 million)
- Location: Zibo City, Shandong Province
- Products: Erythritol (12,000 t/a) and zero-calorie sugar (8,000 t/a).

**On 16 Jan., 2019**, the second announcement of the EIA report of Shandong Tianli's polyol reconstructed and expanded project was published. According to the report, Shandong Tianli planned to upgrade the technologies used in its current polyol production lines so that the capacity could increase from 500,000 t/a to 550,000 t/a, including 450,000 t/a of sorbitol, 50,000 t/a of maltitol, 30,000 t/a of mannitol, and 20,000 t/a of glucose.

**On 12 March 2019**, Qinhuangdao Lihua Starch Co., Ltd. (Qinhuangdao Lihua) published on its official site the environmental information of its project to upgrade sorbitol production technique. The project started construction on 5 Sept., 2017 and was put in trial operation on 27 March, 2018. During 25 and 26 Sept., 2018, monitoring was made; results showed that the production line was run at 85% capacity (output: 180 t/d). After completion, sorbitol production technique was upgraded, without changes in capacity (70,000 t/a).

**On 18 June 2019**, Zhucheng Dongxiao Biotechnology Co., Ltd. (Zhucheng Dongxiao)'s energy-saving report



on 20,000 t/a high-end erythritol expansion project was approved. The project is located in Zhucheng City, covering an area of 5.67 ha (85 mu). After completion, it could increase the company's erythritol capacity by 10,000 t/a. This project was put into trial production in June 2020.

**On 25 June 2019**, Zhaoqing High-Tech Network issued a public notice on the acceptance of EIA report for Zhaoqing Huanfa Biotechnology Co., Ltd.'s expansion project. Basic information:

- Total investment: USD51.00 million (RMB351 million)
- Expected capacity: After completion, the annual output of liquid sorbitol, crystalline sorbitol, crystal mannitol could be increased by 50,000 tonnes, 20,000 tonnes and 10,000 tonnes respectively.

**On 9 Aug., 2019**, Anhui BBKA Likang Pharmaceutical Co., Ltd. (BBKA Likang) issued a project filing announcement on the 30,000 t/a of erythritol and 5,000 t/a of glutamine. This new project is located in Anhui Province, with a total investment of USD41.85 million (RMB288.05 million) and a construction period of one year. But the COVID-19 greatly affected the progress. In Oct. 2021, the project successfully launched first trial production.

**On 26 Aug., 2019**, Dezhou National High-Tech Industrial Development Zone issued the first EIA report of 25,000 t/a functional sugar project of Shandong Bailong Chuangyuan Biotechnology Co., Ltd. (Shandong Bailong). According to the announcement, the project involves 5,000 t/a xylitol and 10,000 t/a xylose oligosaccharide.

**On 10 April, 2020**, Hubei HIYEE Biotechnology Co., Ltd. firstly publicized the EIA of the 4,000 t/a erythritol technological transformation project. The project is to transform 4,000 t/a production capacity of yeast into erythritol.

**On 15 April, 2020**, the EIA report of Dezhou Heyang Biotechnology Co., Ltd.'s high-end starch and deep processing project was publicized, with a total investment of USD0.16 billion (RMB1.12 billion). According to the report, the project involves 20,000 t/a erythritol. The project started construction in March 2021, and it was still under construction as of November 2021.

**In Sept., 2020**, Baolingbao Biology started construction of an expansion project with 13,000 t/a erythritol. After 10 months of construction & commissioning, the project was completed and put into production at the end of July 2021.

**On 21 Dec., 2020**, Shandong Sanyuan Biotechnology Co., Ltd. announced in its prospectus that it plans to raise USD129.90 million (RMB900 million) for the 50,000 t/a erythritol and technology center project. The project is planned to be constructed in three phases:

- Phase I : to build 20,000 t/a erythritol production lines and a technology center, 24 months from raising funds to going into production
- Phase II : to build 20,000 t/a erythritol production lines, 12 months from the operation of phase I to the completion of phase II
- Phase III: to build 10,000 t/a erythritol production lines, 12 months from the operation of phase II to the completion of phase III

**On 21 Dec., 2020**, the EIA report of Rizhao Puli Biotechnology Co., Ltd.'s 100,000 t/a erythritol project was publicized, with a total investment of USD0.22 billion (RMB1.50 billion). This project is one of the key projects in Shandong Province in 2021, and is expected to be completed and put into operation in December 2023.

## **Company development**

**In 2018**, Baolingbao Biology Co., Ltd. (Baolingbao Biology) made headway in its functional sugar segment as it participated in the drafting of national standards and passed the site examination of the FDA with no inspectional findings. On 28 April, 2021, Baolingbao Biology released its 2020 annual report, showing a rising revenue but a declining net profit. In 2020, Baolingbao Biology's revenue from sugar alcohol business was USD58.81 million (RMB407.48 million), with a yearly increase of 66.66%, and gross profit margin of the business was 15.27%.

**On 3 Dec., 2020**, Shandong Bailong's IPO application was approved by the China Securities Regulatory Commission (CSRC), and got listed on the Shanghai Stock Exchange on 21 April, 2021. In addition, according to Shandong Bailong's prospectus, it aimed to raise USD108.49 million (RMB701 million) for investment projects, among which USD7.72 million (RMB49.90 million) would be used in the 6,000 t/a of crystalline maltitol crystallisation project. In 2020, Shandong Bailong's revenue was USD72.11 million

(RMB499.62 million), with a yearly increase of 18.67%, and its profit was USD15.98 million (RMB110.75 million), an increase of 12.18% year on year.

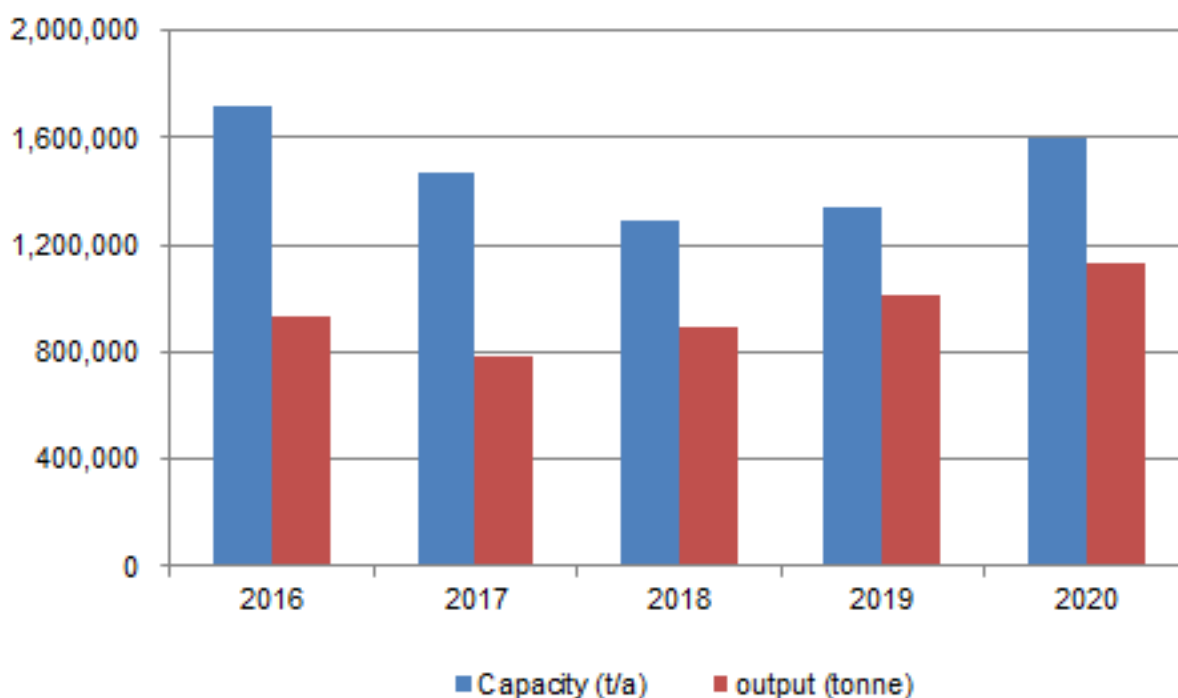
**On 15 July, 2020**, Shandong Longlive Bio-technology Co., Ltd. (Shandong Longlive) delisted from Shenzhen Stock Exchange. Recent years, Shandong Longlive was in a financial quagmire and reported negative audited net assets for three consecutive fiscal years in 2017–2019.

**On 28 Sept., 2020**, Zhejiang Huakang Pharmaceutical Co., Ltd. was approved by the CSRC for its IPO application, and was listed on the Shanghai Stock Exchange on 9 Feb., 2021. In 2020, the company's revenue was USD0.19 billion (RMB1.32 billion), down 12.66% year on year, and its net profit attributable to shareholders was USD44.33 million (RMB307.17 million), up 13.72% year on year.

### 3 Sorbitol

#### 3.1 Capacity and output of sorbitol in China, 2016–2020

Figure 3.1-1 Capacity and output of sorbitol in China, 2016–2020



Source: CCM

The capacity of sorbitol in China was 1,718,000 t/a in 2016, but decreased year by year to 1,292,000 t/a in 2018. Due to sluggish demand and rising costs, eight sorbitol producers stopped production since 2017, with an accumulative capacity of 401,000 t/a. In the past three years, owing to expansion projects of Zhaoqing Huanfa Bio-technology Co., Ltd. and Shandong Tianli Pharmaceutical Co., Ltd., and a newly-established project of Heilongjiang NHU Biotechnology Co., Ltd., China's sorbitol capacity increased to 1,597,00 t/a in 2020.

The output of sorbitol declined a lot from 936,000 tonnes in 2016 to 780,500 tonnes in 2017. The decline was mainly triggered by stringent environmental inspections. The output then rebounded in 2018 and reached 1,012,500 tonnes in 2019, thanks to the increasing consumption in vitamin C production and overseas demand. In 2020, growing demand drove the output further up, to 1,132,600 tonnes.

#### 3.2 Major producers and distribution of sorbitol in China, 2016–2020

There were 15 active producers of sorbitol in China in 2020, most of which maintained an operating rate above 60%. Shandong Tianli Pharmaceutical Co., Ltd. (Shandong Tianli), Roquette (China) Co., Ltd., Chiping Detong Biology Co., Ltd. and Zhaoqing Huanfa Bio-technology Co., Ltd. were the top four in terms of output in 2020, their output accounting for 78.6% of the total.

Notably, Khalista (Liuzhou) Chemical Industries Ltd. once had a capacity of 120,000 t/a, ranked fourth during 2016–2017, but it stopped production in 2018 because the foreign investors withdrew capital.

Sorbitol production is highly concentrated in the eastern parts of China. Among all regions in China, Shandong Province took the lead, capturing over 62% of the total capacity in 2020, which mainly thanks to Shandong Tianli, the largest sorbitol producer in China. Jiangsu Province ranked second, followed by Guangdong Province, both of them having one active producer.

Table 3.2-1 Capacity and output of sorbitol producers in China, 2016–2020

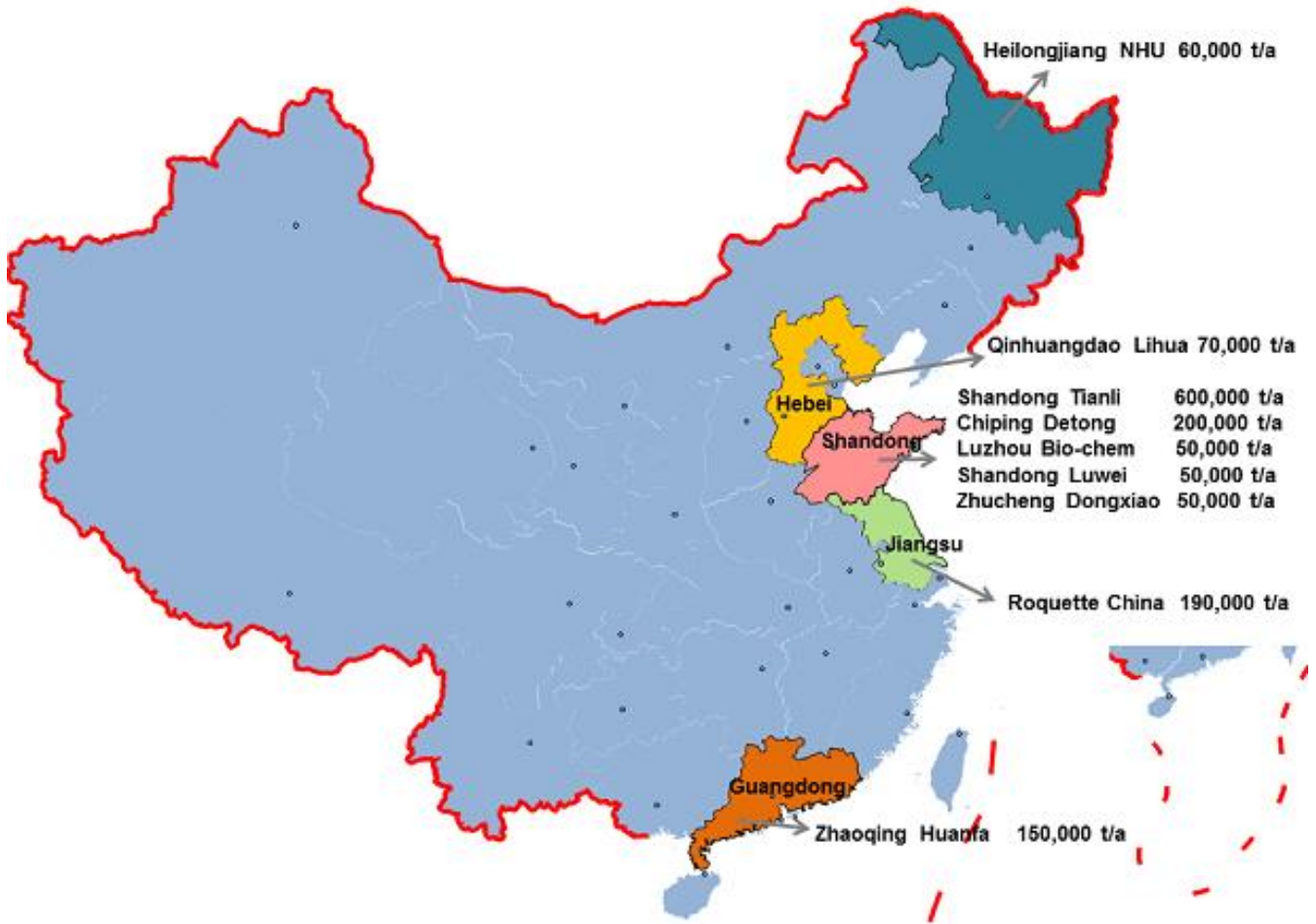
No.	Producer	Abbreviation	Location	Status, 2020	Capacity, t/a					Output, tonne				
					2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
1	Shandong Tianli Pharmaceutical Co., Ltd.	Shandong Tianli	Shandong	Active	600,000	400,000	400,000	400,000	400,000	400,000	375,000	380,000	350,000	360,000
2	Chiping Detong Biology Co., Ltd.	Chiping Detong	Shandong	Active	200,000	200,000	200,000	200,000	200,000	172,000	82,000	65,000	15,000	0
3	Roquette (China) Co., Ltd.	Roquette China	Jiangsu	Active	190,000	190,000	190,000	190,000	190,000	175,000	170,000	160,000	150,000	120,000
4	Zhaoqing Huanfa Bio-technology Co., Ltd.	Zhaoqing Huanfa	Guangdong	Active	150,000	150,000	100,000	100,000	100,000	143,000	142,000	85,000	80,000	80,000
5	Qinhuangdao Lihua Starch Co., Ltd.	Qinhuangdao Lihua	Hebei	Active	70,000	70,000	70,000	70,000	70,000	59,000	60,000	50,000	40,000	50,000
6	Heilongjiang NHU Biotechnology Co., Ltd.	Heilongjiang NHU	Heilongjiang	Active	60,000	/	/	/	/	1,000	/	/	/	/
7	Luzhou Bio-chem Technology Co., Ltd.	Luzhou Bio-chem	Shandong	Active	50,000	50,000	50,000	50,000	50,000	46,000	45,000	45,000	30,000	35,000
8	Shandong Luwei Pharmaceutical Co., Ltd.	Shandong Luwei	Shandong	Active	50,000	50,000	50,000	50,000	50,000	41,000	42,000	30,000	30,000	30,000
9	Zhucheng Dongxiao Biotechnology Co., Ltd.	Zhucheng Dongxiao	Shandong	Active	50,000	50,000	50,000	50,000	50,000	43,000	42,000	30,000	30,000	35,000
10	Zhejiang Huakang Pharmaceutical Co., Ltd.	Huakang Pharma	Zhejiang	Active	20,000	20,000	20,000	20,000	20,000	26,000	25,000	20,500	9,000	3,500
11	Qingdao Bright Moon Seaweed Group Co., Ltd.	Qingdao Brightmoon	Shandong	Active	10,000	10,000	10,000	10,000	10,000	6,800	7,000	6,000	6,000	6,000

No.	Producer	Abbreviation	Location	Status, 2020	Capacity, t/a					Output, tonne				
					2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
12	Shandong Jintian Bio-technology Co., Ltd.	Shandong Jintian	Shandong	Active	6,000	6,000	6,000	6,000	6,000	4,300	4,500	4,000	3,000	3,000
13	Shouguang Golden Sunshine Sugar Alcohol Co., Ltd.	Shouguang Golden Sunshine	Shandong	Active	6,000	6,000	6,000	6,000	6,000	4,200	4,500	3,500	3,000	3,500
14	Shijiazhuang Huaxu Pharmaceutical Co., Ltd.	Huaxu Pharma	Hebei	Active	6,000	6,000	6,000	6,000	6,000	3,900	4,000	3,000	2,000	2,000
15	Guangxi Nanning Chemical Pharmaceutical Co., Ltd.	Nanning Chemical	Guangxi	Active	4,000	4,000	4,000	4,000	4,000	2,400	2,500	1,500	1,500	2,000
16	Changchun Dacheng Industrial Group Co., Ltd.	Changchun Dacheng	Jilin	Idle	60,000	60,000	60,000	60,000	60,000	0	0	0	0	0
17	Henan Tianmimi Sugar Industry Co., Ltd.	Henan Tianmimi	Henan	Idle	30,000	30,000	30,000	60,000	60,000	0	0	0	0	0
18	Shandong Futaste Pharmaceutical Co., Ltd.	Shandong Futaste	Shandong	Idle	25,000	25,000	25,000	25,000	25,000	0	0	0	0	0
19	Shandong Lvjian Biological Technology Co., Ltd.	Shandong Lvjian	Shandong	Stopped	/	5,000	5,000	5,000	5,000	/	2,000	3,000	3,000	3,000
20	Khalista (Liuzhou) Chemical Industries Ltd.	Khalista Chemical	Guangxi	Stopped	/	/	/	120,000	120,000	/	/	/	20,000	85,000
21	Shandong Bailong Chuangyuan Biotechnology Co., Ltd.	Shandong Bailong	Shandong	Stopped	/	/	/	20,000	20,000	/	/	/	0	0

No.	Producer	Abbreviation	Location	Status, 2020	Capacity, t/a					Output, tonne				
					2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
22	Jiangxi Jingcheng Sugar Alcohol Co., Ltd.	Jiangxi Jingcheng	Jiangxi	Stopped	/	/	/	6,000	6,000	/	/	/	0	0
23	Shanghai Dasheng Food Co., Ltd.	Shanghai Dasheng	Shanghai	Stopped	/	/	/	5,000	5,000	/	/	/	3,000	3,000
24	Hebei Zhaozhou Limin Sugar Industry Group Co., Ltd.	Hebei Limin	Hebei	Stopped	/	/	/	/	100,000	/	/	/	/	60,000
25	NCPC Huaying Co., Ltd.	NCPC Huaying	Hebei	Stopped	/	/	/	/	80,000	/	/	/	/	10,000
26	Northeast Pharmaceutical Group Co., Ltd.	Northeast Pharma	Liaoning	Stopped	/	/	/	/	65,000	/	/	/	/	40,000
Others					10,000	10,000	10,000	10,000	10,000	5,000	5,000	5,000	5,000	5,000
<b>Total</b>					<b>1,597,000</b>	<b>1,342,000</b>	<b>1,292,000</b>	<b>1,473,000</b>	<b>1,718,000</b>	<b>1,132,600</b>	<b>1,012,500</b>	<b>891,500</b>	<b>780,500</b>	<b>936,000</b>

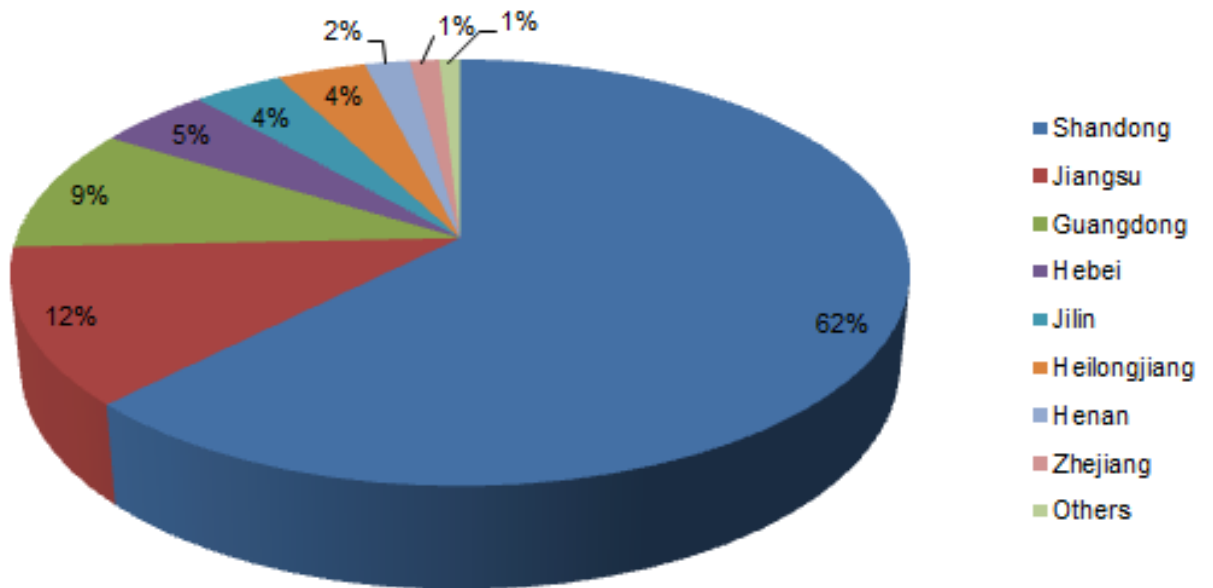
Source: CCM

Figure 3.2-1 Capacity distribution of the top nine sorbitol producers in China, 2020



Source: CCM

Figure 3.2-2 Shares of sorbitol capacity in China by region, 2020



Note: Due to rounding, the total may not equal 100%.

Source: CCM

### 3.3 Monthly ex-works price of sorbitol in China, Jan. 2016–June 2021

Downtrend in the price of 70% syrup sorbitol was witnessed during Jan. 2016 to May 2017. In this period, the lowest price was recorded at USD348/t in May 2017. The decrease was mainly caused by the dropping price of corn and the decreasing demand from downstream sectors.

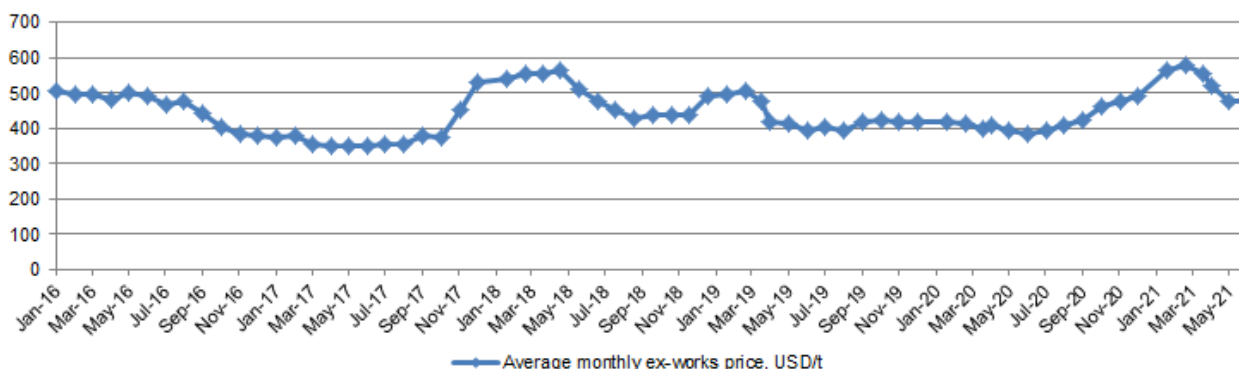
The price rebounded and jumped from USD376/t in Oct. 2017 to USD566/t in April 2018, up by 50.4%. The surge was mainly because of shrinking supply as the production is restricted by the government in peak season. However, oversupply drove the price down from May 2018 to Nov. 2018; it then rebounded and experienced a small peak during Dec. 2018 to Feb. 2019 thanks to increasing downstream demand. Since March 2019, the price went down and then fluctuated between USD382/t and USD424/t during H2 2019 and H1 2020.

Since July 2020, the price went up, driven by higher corn price and larger downstream demand. But the price started to drop in March 2021 due to the price cut of corn, the June 2021 price registered at USD476/t.

As for the ex-works price of crystalline sorbitol, since April 2016, it went up and soon rocketed to USD1,283/t in Aug. 2016 given its tight supply. Affected by the dropping corn price, it then fell again to USD1,151/t in Jan. 2017. During Feb. 2017 to May 2018, it fluctuated between USD1,244/t and USD1,135/t. Then up to H1 2019, the price of crystalline sorbitol witnessed a similar change with syrup sorbitol. In H2 2019, the price climbed up in growing demand.

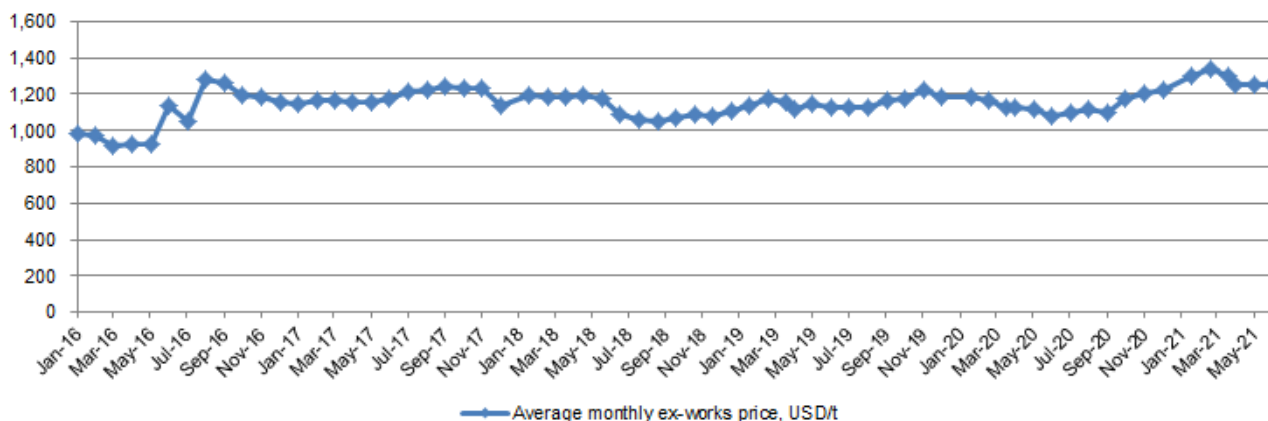
Affected by the sluggish demand under COVID-19, the price saw a general downtrend in H1 2020. Then, as the economy recovered, the price rebounded; the price reached a new peak in Feb. 2021, and then it dropped slightly and hovered around USD1,250/t.

Figure 3.3-1 Monthly ex-works price of 70% syrup sorbitol in China, Jan. 2016–June 2021



Source: CCM

Figure 3.3-2 Monthly ex-works price of crystalline sorbitol in China, Jan. 2016–June 2021



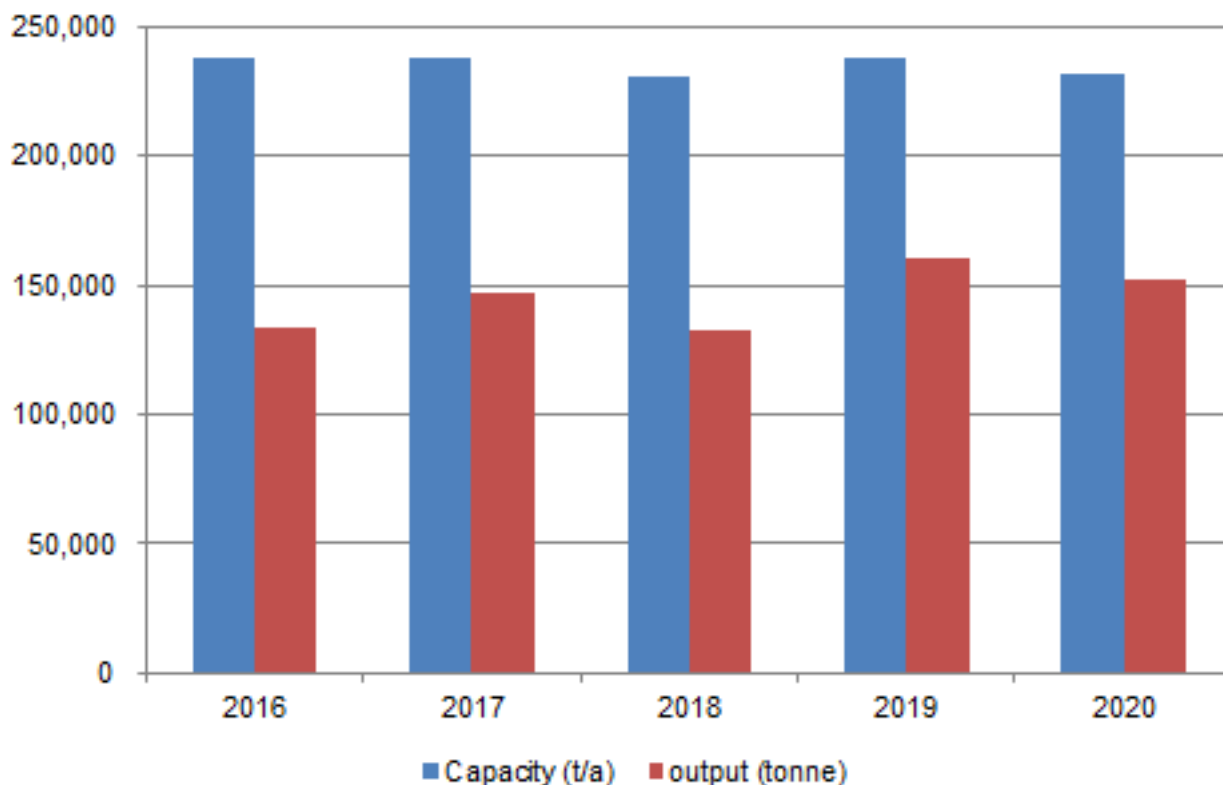
Source: CCM



## 4 Maltitol

### 4.1 Capacity and output of maltitol in China, 2016–2020

Figure 4.1-1 Capacity and output of maltitol in China, 2016–2020



Source: CCM

The capacity of maltitol in China was 238,000 t/a in 2016 and 2017. Notably, in 2018, due to overcapacity and low profit, Khalista (Liuzhou) Chemical Industries Ltd. stopped production and Zhejiang Huakang Pharmaceutical Co., Ltd. (Huakang Pharma) changed part of its maltitol production lines to produce xylitol. Therefore, the capacity of maltitol dropped to 231,000 t/a in 2018. However, Huakang Pharma restored its maltitol production lines in 2019. As a result, the capacity of maltitol went back up to 238,000 t/a. In 2020, due to poor management, Shandong Lvjian Biological Technology Co., Ltd. stopped maltitol production, so maltitol capacity in China dropped to 232,000 t/a.

In terms of output, it increased to 146,500 tonnes in 2017, driven by increasing demand, but declined by 9.8% year on year to 132,100 tonnes in 2018, triggered by the fierce competition in sugar alcohol market. With low-sugar diet getting popular, demand from downstream sector increased, which led to the rapid growth of maltitol production. The output came to 160,900 tonnes in 2019, with an operating rate of 67.6%. In 2020, due to aftermaths of COVID-19, the demand for maltitol decreased, and the output of maltitol dropped to 151,700 tonnes, down 5.7% year on year.

### 4.2 Major producers and distribution of maltitol in China, 2016–2020

In 2020, there were 10 active maltitol producers in China. Among them, in terms of output in 2020, Shandong Tianli Pharmaceutical Co., Ltd. was the largest producer, followed by Zhucheng Dongxiao Biotechnology Co., Ltd., the two together accounting for 46.8% of the national total; Roquette (China) Co., Ltd. came third with an operating rate of some 86.0%.

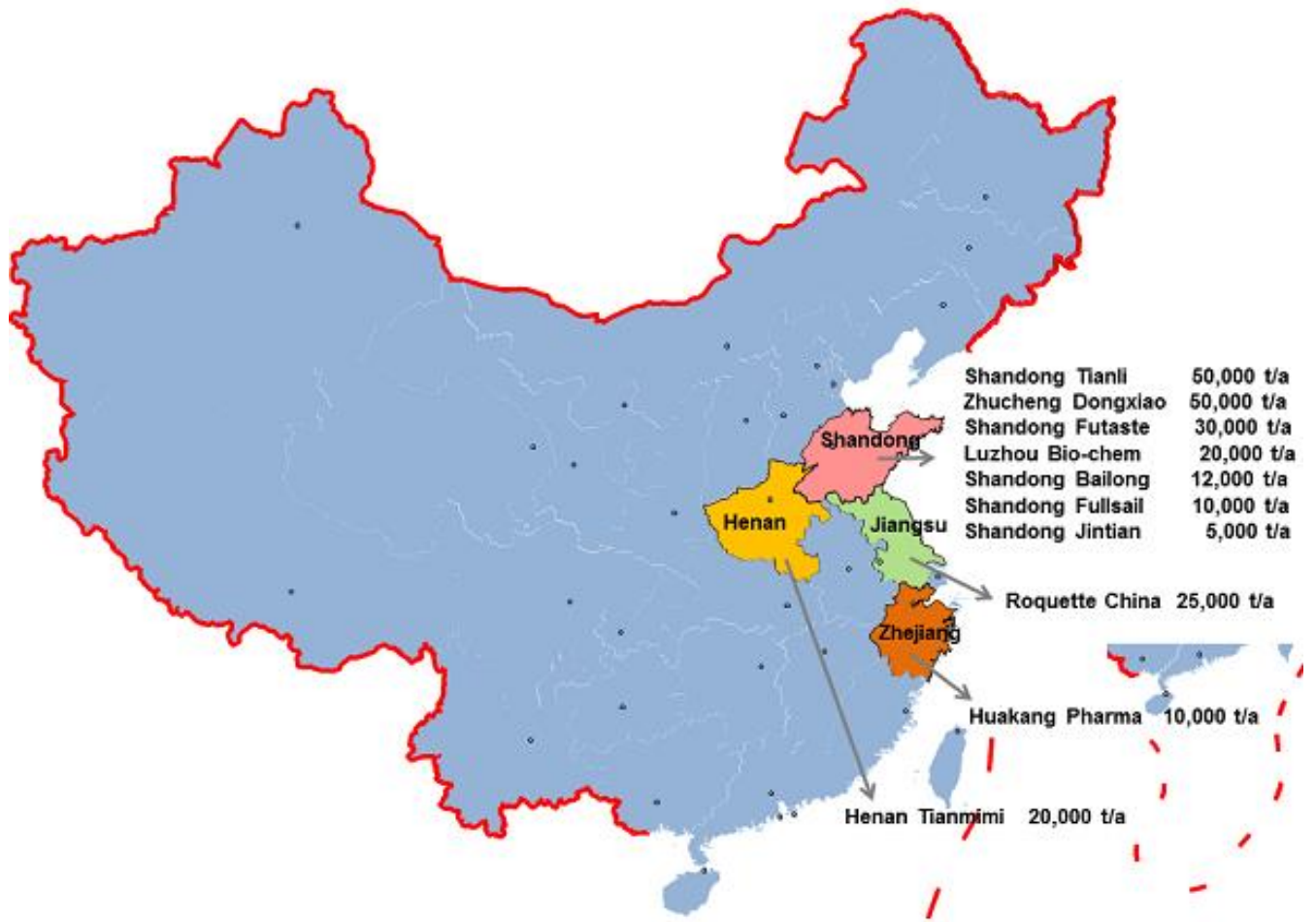
Domestic maltitol manufacturers are highly concentrated in the eastern part of China. In 2020, the capacity in Shandong Province accounted for 76.3% of the national total, since the top two producers are located there; Jiangsu, Henan and Zhejiang provinces all had one active producer.

Table 4.2-1 Capacity and output of maltitol producers in China, 2016–2020

No.	Producer	Abbreviation	Location	Status, 2020	Capacity, t/a					Output, tonne				
					2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
1	Shandong Tianli Pharmaceutical Co., Ltd.	Shandong Tianli	Shandong	Active	50,000	50,000	50,000	50,000	50,000	40,000	39,000	36,000	38,000	35,000
2	Zhucheng Dongxiao Biotechnology Co., Ltd.	Zhucheng Dongxiao	Shandong	Active	50,000	50,000	50,000	50,000	50,000	31,000	32,000	28,000	30,000	25,000
3	Shandong Futaste Pharmaceutical Co., Ltd.	Shandong Futaste	Shandong	Active	30,000	30,000	30,000	20,000	20,000	17,500	18,000	9,000	7,500	7,000
4	Roquette (China) Co., Ltd.	Roquette China	Jiangsu	Active	25,000	25,000	25,000	25,000	25,000	21,500	22,000	19,000	21,000	19,500
5	Luzhou Bio-chem Technology Co., Ltd.	Luzhou Bio-chem	Shandong	Active	20,000	20,000	20,000	20,000	20,000	12,000	13,000	8,000	11,000	9,000
6	Henan Tianmimi Sugar Industry Co., Ltd.	Henan Tianmimi	Henan	Active	20,000	20,000	20,000	20,000	20,000	8,500	10,200	9,000	9,500	9,000
7	Shandong Bailong Chuangyuan Bio-tech Co., Ltd.	Shandong Bailong	Shandong	Active	12,000	6,000	6,000	6,000	6,000	4,600	3,800	3,000	3,500	3,500
8	Zhejiang Huakang Pharmaceutical Co., Ltd.	Huakang Pharma	Zhejiang	Active	10,000	10,000	3,000	10,000	10,000	7,200	8,200	3,100	6,200	4,500
9	Shandong Fullsail Biotechnology Co., Ltd.	Shandong Fullsail	Shandong	Active	10,000	10,000	10,000	10,000	10,000	6,300	6,500	5,000	7,000	5,500
10	Shandong Jintian Bio-technology Co., Ltd.	Shandong Jintian	Shandong	Active	5,000	5,000	5,000	5,000	5,000	3,100	3,200	3,000	2,800	3,000
11	Shandong Lvjian Biological Technology Co., Ltd.	Shandong Lvjian	Shandong	Stopped	/	12,000	12,000	12,000	12,000	/	5,000	9,000	8,500	8,000
12	Khalista (Liuzhou) Chemical Industries Ltd.	Khalista Chemical	Guangxi	Stopped	/	/	/	10,000	10,000	/	/	/	1,500	5,000
<b>Total</b>					<b>232,000</b>	<b>238,000</b>	<b>231,000</b>	<b>238,000</b>	<b>238,000</b>	<b>151,700</b>	<b>160,900</b>	<b>132,100</b>	<b>146,500</b>	<b>134,000</b>

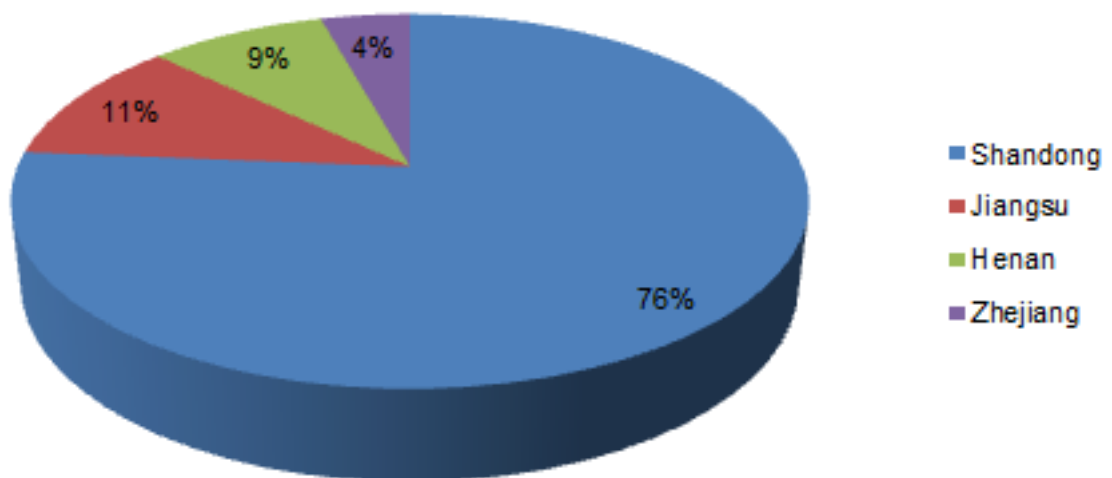
Source: CCM

Figure 4.2-1 Capacity distribution of maltitol producers in China, 2020



Source: CCM

Figure 4.2-2 Shares of maltitol capacity in China by region, 2020



Source: CCM

### 4.3 Monthly ex-works price of maltitol in China, Jan. 2016–June 2021

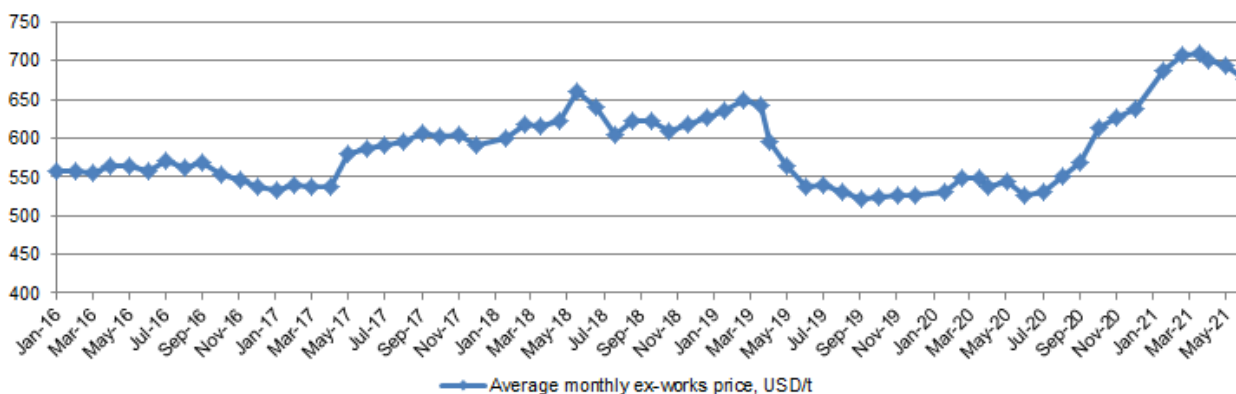
In 2016, the ex-works price of 75% liquid maltitol fluctuated between USD537/t and USD571/t; it then decreased to USD532/t in Jan. 2017 after slight drops in Q4 2016. During this period, due to fierce competition and excessive capacity, some maltitol producers reduced their prices for more orders. Meanwhile, the price of corn witnessed a decrease, which brought the price of maltitol down further. Till April 2017, the price kept at a low level due to the low price of corn.

Since May 2017, the price started to climb up and went back to USD660/t in May 2018, supported by its reduced output nationwide. Then the price fluctuated between USD605/t and USD648/t during June 2018 and Feb. 2019 but plummeted to USD537/t in June 2019. The decline was attributed to an increasing supply and shrinking demand. Thereafter, due to the sluggish market, the price stayed below USD550/t all the way to July 2020, though the price of corn was quite stable.

Then, with the price of corn and demand increasing, the price shot up. It rose to a historical high in March 2021 at USD710/t. Later, due to the downward adjustment of raw material price, the price slipped a bit to USD676/t in June, with a yearly increase of 28.6%.

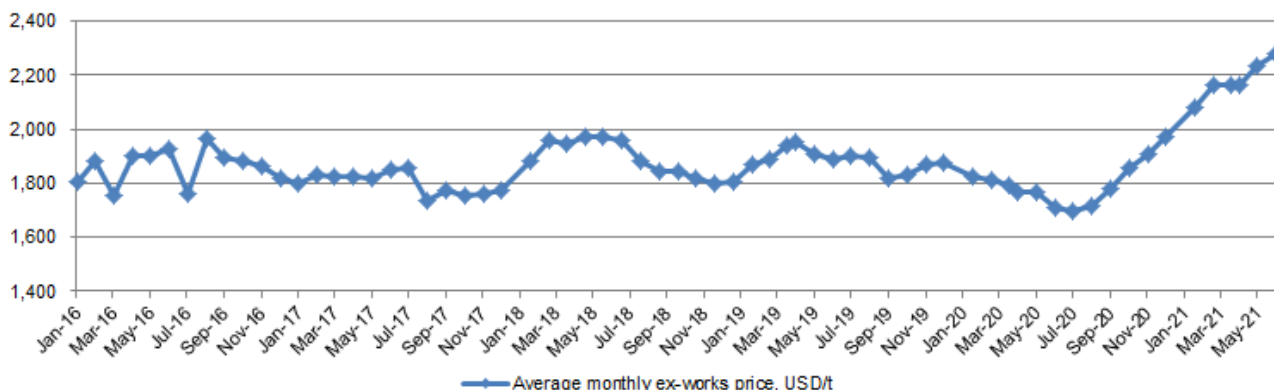
As for the price of crystalline maltitol, it fluctuated between USD1,733/t and USD1,974/t in Jan. 2016–Dec. 2019. However, it headed south further and hit the bottom at USD1,697/t in July 2020; the fall was triggered by shrinking demand under COVID-19. Since Aug. 2020, supported by increasing demand and corn price, it climbed up quickly and reached USD2,281/t in June 2021, up 33.3% year on year.

Figure 4.3-1 Monthly ex-works price of 75% liquid maltitol in China, Jan. 2016–June 2021



Source: CCM

Figure 4.3-2 Monthly ex-works price of crystalline maltitol in China, Jan. 2016–June 2021

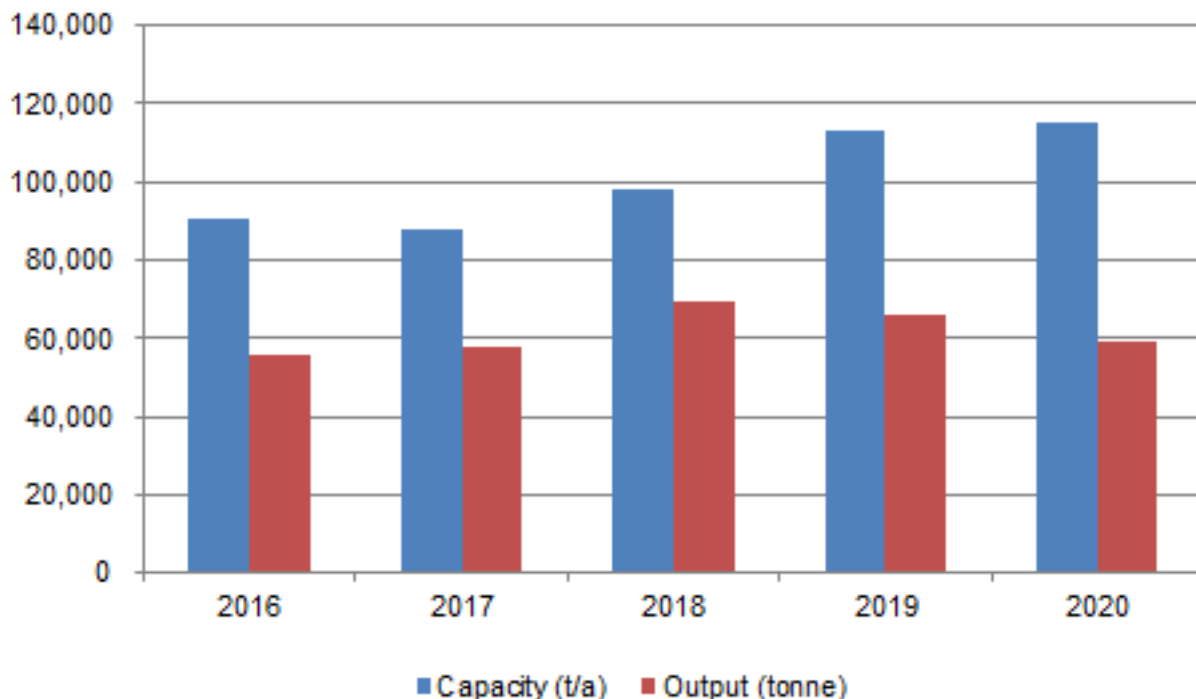


Source: CCM

## 5 Xylitol

### 5.1 Capacity and output of xylitol in China, 2016–2020

Figure 5.1-1 Capacity and output of xylitol in China, 2016–2020



Source: CCM

The capacity of xylitol in China declined from 90,500 t/a in 2016 to 88,000 t/a in 2017, but it jumped to 98,000 t/a in 2018 and further increased to 115,000 t/a in 2020.

The output of xylitol increased from 55,800 tonnes in 2016 to 69,500 tonnes in 2018 but declined to 59,500 tonnes in 2020. Since 2019, Shandong Longlive Bio-technology Co., Ltd. has slashed production due to its financial troubles.

### 5.2 Major producers and distribution of xylitol in China, 2016–2020

There were five active xylitol producers in China in 2020. Shandong Futaste Pharmaceutical Co., Ltd. (Shandong Futaste), with a capacity of 40,000 t/a, was still the biggest xylitol manufacturer in China in 2020. Yusweet Xylitol Technology Co., Ltd. (formerly known as Anyang Yuxin Xylitol Technology Co., Ltd.) expanded its capacity to 20,000 t/a this year, but Shandong Lvjian Biological Technology Co., Ltd. stopped producing xylitol due to poor business operations.

In 2017, two xylitol producers stopped production, leading to higher concentration in domestic xylitol market. Moreover, in 2018 and 2019, Zhejiang Huakang Pharmaceutical Co., Ltd. expanded its capacity from 20,000 t/a to 35,000 t/a. But there also came a new entrant in 2019—Harbin Yimei Bioengineering Technology Co., Ltd. joined the market with a capacity of 10,000 t/a.

Table 5.2-1 Capacity and output of xylitol producers in China, 2016–2020

No.	Producer	Abbreviation	Location	Status, 2020	Capacity, t/a					Output, tonne				
					2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
1	Shandong Futaste Pharmaceutical Co., Ltd.	Shandong Futaste	Shandong	Active	40,000	40,000	40,000	40,000	40,000	14,000	16,000	15,000	11,000	15,000
2	Zhejiang Huakang Pharmaceutical Co., Ltd.	Huakang Pharma	Zhejiang	Active	35,000	35,000	30,000	20,000	20,000	32,000	34,000	34,000	21,000	18,000
3	Yusweet Xylitol Technology Co., Ltd.	Yusweet Xylitol	Henan	Active	20,000	10,000	10,000	10,000	10,000	9,000	8,000	7,700	9,000	8,000
4	Harbin Yimei Bioengineering Technology Co., Ltd.	Harbin Yimei	Heilongjiang	Active	10,000	10,000	/	/	/	3,000	200	/	/	/
5	Shandong Longlive Bio-technology Co., Ltd.	Shandong Longlive	Shandong	Active	10,000	10,000	10,000	10,000	10,000	1,500	2,300	7,300	10,000	10,000
6	Shandong Lvjian Biological Technology Co., Ltd.	Shandong Lvjian	Shandong	Stopped	/	8,000	8,000	8,000	8,000	/	5,500	5,500	6,500	4,500
7	Shandong Jianyu Biological Technology Co., Ltd.	Shandong Jianyu	Shandong	Stopped	/	/	/	/	1,500	/	/	/	/	0
8	Tianjin Guigu Science & Technology Development Co., Ltd.	Tianjin Guigu	Tianjin	Stopped	/	/	/	/	1,000	/	/	/	/	300
<b>Total</b>					<b>115,000</b>	<b>113,000</b>	<b>98,000</b>	<b>88,000</b>	<b>90,500</b>	<b>59,500</b>	<b>66,000</b>	<b>69,500</b>	<b>57,500</b>	<b>55,800</b>

Source: CCM

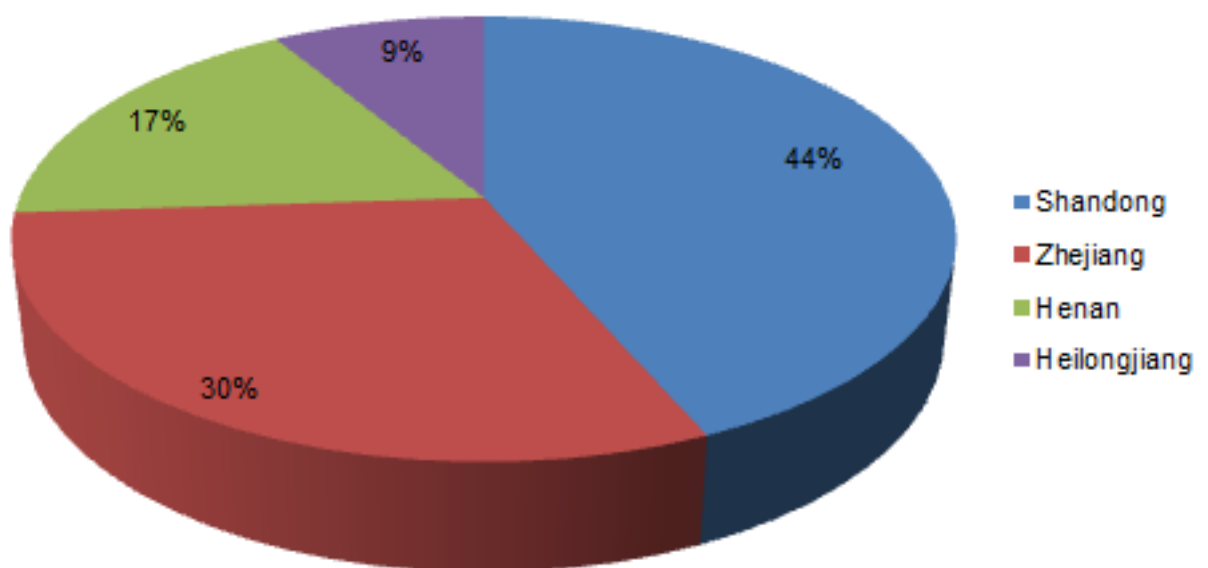
Domestic xylitol manufacturers are mainly located in Shandong, Zhejiang, Henan and Heilongjiang provinces. The capacity in Shandong Province accounted for around 44% of the total in 2020.

Figure 5.2-1 Capacity distribution of xylitol producers in China, 2020



Source: CCM

Figure 5.2-2 Share of xylitol capacity in China by region, 2020



Source: CCM

### 5.3 Monthly ex-works price of xylitol in China, Jan. 2016–June 2021

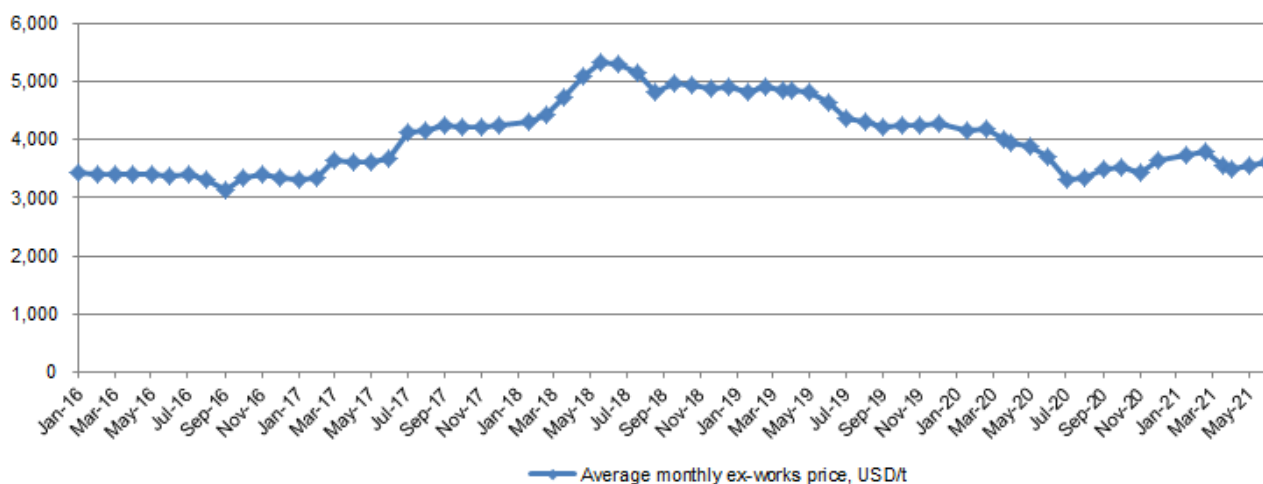
In 2016, the ex-works price of xylitol in China was generally stable, hovering around USD3,350/t, except a dip to USD3,144/t in Sept. 2016.

During Jan. 2017 and May 2018, the price went up rapidly and hit the highest point at USD5,340/t in May 2018, which was mainly attributed to the surges in exports and domestic downstream demand.

The price fell back and the July 2020 price was USD3,323/t, 37.4% lower than that in June 2018, due to abundant supply and poor demand abroad. According to customs data, the export volume of xylitol was 43,935 tonnes in 2019, down 5.1% year on year. Moreover, in H1 2020, due to sluggish overseas demand under COVID-19, the export volume of xylitol was only 20,502 tonnes, down 2.9% year on year.

As the economy started to recover from H2 2020, both the demand for xylitol and the price of corn witnessed increases, and thus the price of xylitol started to rise slowly, reaching USD3,791/t in February 2021. However, the price of corn fell in March, with a national policy rolled out to regulate the corn price, which led to a small decline in xylitol price. In June 2021, the price of xylitol rebounded to USD3,618/t facing increasing demand.

Figure 5.3-1 Monthly ex-works price of xylitol in China, Jan. 2016–June 2021



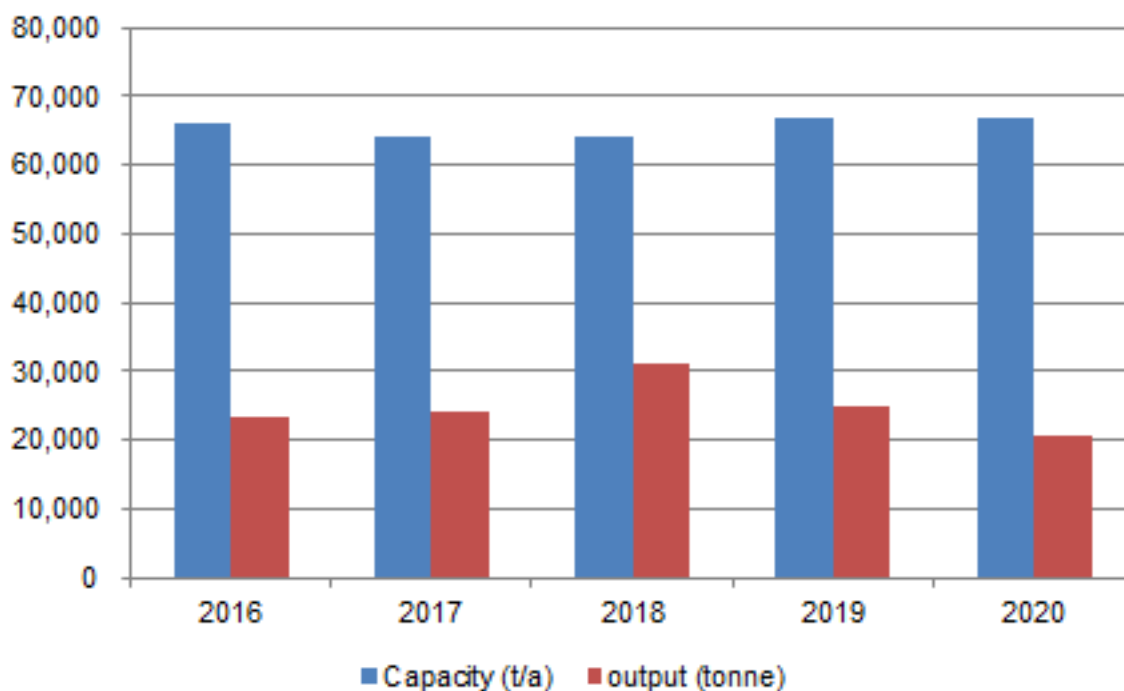
Source: CCM



## 6 Mannitol

### 6.1 Capacity and output of mannitol in China, 2016–2020

Figure 6.1-1 Capacity and output of mannitol in China, 2016–2020



Source: CCM

The capacity of mannitol in China was 66,000 t/a in 2016 but declined to 64,000 t/a in 2017 and 2018. In 2017, Qingdao Bright Moon Seaweed Group Co., Ltd. expanded its mannitol capacity by 1,000 t/a while Hebei Zhaozhou Limin Sugar Industry Group Co., Ltd. stopped production. In 2019 and 2020, the capacity increased to 67,000 t/a.

As for the output of mannitol, it increased from 23,300 tonnes in 2016 to 31,200 tonnes in 2018 at a CAGR of 15.7%. However, it declined by 20.5% year on year to 24,800 tonnes in 2019, with a relatively low operating rate, at about 37.0%. The output figure in 2020 reduced further to some 20,600 tonnes, experiencing a yearly decrease of 16.9% due to the aftermaths of COVID-19.

### 6.2 Major producers and distribution of mannitol in China, 2016–2020

There were five active mannitol producers in China in 2020. Among these producers, Shandong Tianli Pharmaceutical Co., Ltd. (Shandong Tianli) ranked the first, with a capacity of 30,000 t/a. Notably, Harbin Yimei Bioengineering Technology Co., Ltd. started to produce mannitol in 2019, with a capacity of 3,000 t/a. Shandong Jiejing Group Co., Ltd. and Jiangsu Zhongda Biotechnology Group Co., Ltd. suspended production since 2015.

Table 6.2-1 Capacity and output of mannitol producers in China, 2016–2020

No.	Producer	Abbreviation	Location	Status, 2020	Capacity, t/a					Output, tonne				
					2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
1	Shandong Tianli Pharmaceutical Co., Ltd.	Shandong Tianli	Shandong	Active	30,000	30,000	30,000	30,000	30,000	8,600	9,800	15,000	9,500	9,000
2	Shijiazhuang Huaxu Pharmaceutical Co., Ltd.	Huaxu Pharma	Hebei	Active	20,000	20,000	20,000	20,000	20,000	5,400	6,800	8,200	7,200	7,000
3	Qingdao Bright Moon Seaweed Group Co., Ltd.	Qingdao Brightmoon	Shandong	Active	7,000	7,000	7,000	7,000	6,000	4,900	6,000	6,500	6,200	6,000
4	Guangxi Nanning Chemical Pharmaceutical Co., Ltd.	Nanning Chemical	Guangxi	Active	3,000	3,000	3,000	3,000	3,000	900	1,200	1,500	1,200	1,300
5	Harbin Yimei Bioengineering Technology Co., Ltd.	Harbin Yimei	Heilongjiang	Active	3,000	3,000	/	/	/	800	1,000	/	/	/
6	Shandong Jiejing Group Co., Ltd.	Shandong Jiejing	Shandong	Idle	3,000	3,000	3,000	3,000	3,000	0	0	0	0	0
7	Jiangsu Zhongda Biotechnology Group Co., Ltd.	Jiangsu Zhongda	Jiangsu	Idle	1,000	1,000	1,000	1,000	1,000	0	0	0	0	0
8	Hebei Zhaozhou Limin Sugar Industry Group Co., Ltd.	Hebei Limin	Hebei	Stopped	/	/	/	/	3,000	/	/	/	/	0
<b>Total</b>					<b>67,000</b>	<b>67,000</b>	<b>64,000</b>	<b>64,000</b>	<b>66,000</b>	<b>20,600</b>	<b>24,800</b>	<b>31,200</b>	<b>24,100</b>	<b>23,300</b>

Source: CCM

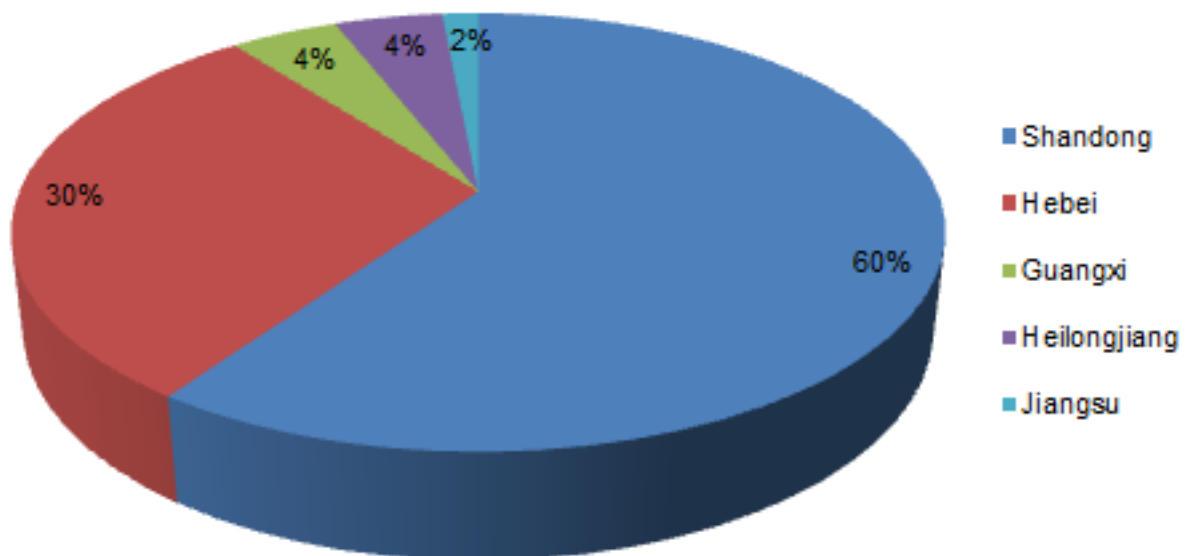
There are three mannitol producers in Shandong Province, where the accumulative capacity reached 40,000 t/a in 2020 and accounted for 59.7% of domestic total.

Figure 6.2-1 Capacity distribution of mannitol producers in China, 2020



Source: CCM

Figure 6.2-2 Shares of mannitol capacity in China by region, 2020



Source: CCM

### 6.3 Monthly ex-works price of mannitol in China, Jan. 2016–June 2021

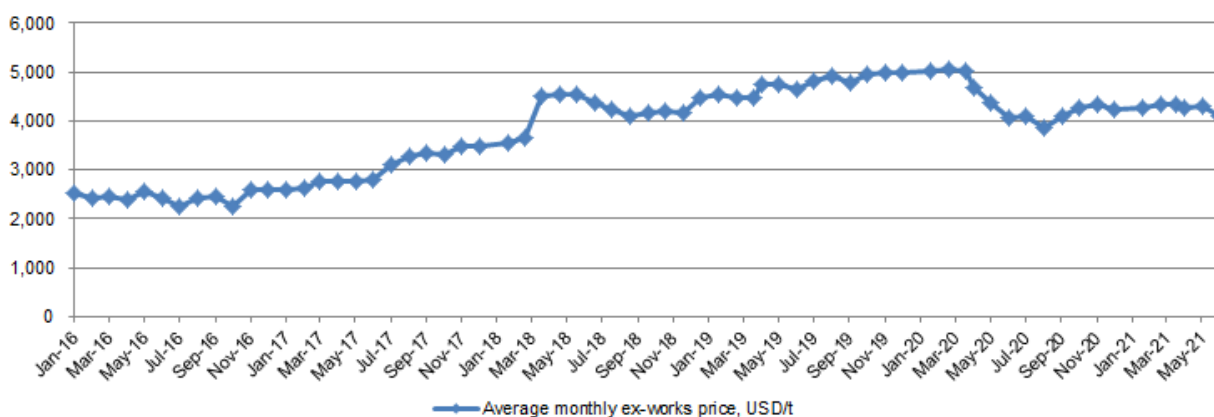
The ex-works price of mannitol fell from USD2,537/t in Jan. 2016 to USD2,239/t in Oct. 2016; the general downtrend was mainly ascribed to sluggish downstream markets and overcapacity of mannitol.

Notably, in 2015, the Chinese government increased the export rebate rate for mannitol products from 9% to 13%, aiming to stimulate the export business. However, the result was unsatisfactory, with the full-year export declining by 65% year on year. Therefore, the government reset the rebate rate to 9% on 1st Jan., 2016 but reinstated the 13% rate from 1st Sept., 2016. Disappointingly, it also failed to boost export, given low profits and a sluggish overseas demand.

During Nov. 2016–Dec. 2019, encouraged by growing demand, the price of mannitol showed an upward trend on the whole and peaked at USD4,981/t in Dec. 2019.

In 2020, the price stood above USD5,000/t in Q1, but then dropped quite steadily to USD3,858/t in August due to sluggish demand and fierce competition under COVID-19. Later, with economy perking up and demand increasing, the price of mannitol recovered slightly and remained hovering around USD4,300/t till May 2021. However, as the price of raw material declined since May 2021, the price of mannitol fell to USD4,090/t in June.

Figure 6.3-1 Monthly ex-works price of food grade mannitol in China, Jan. 2016–June 2021

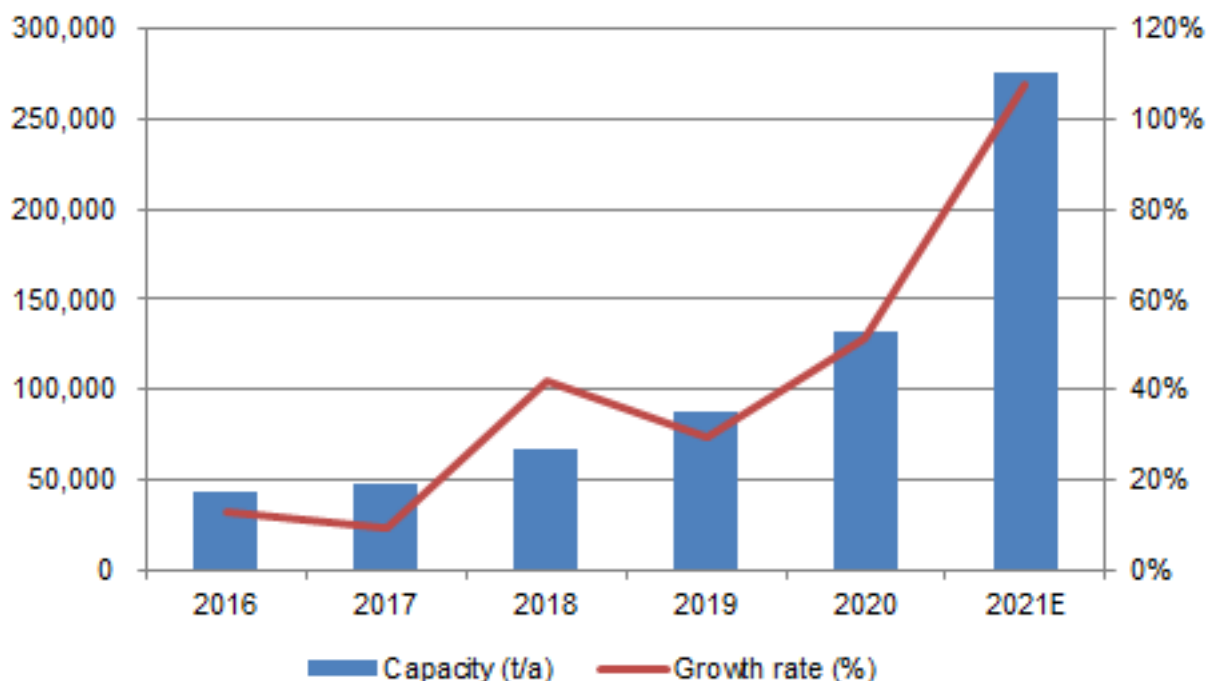


Source: CCM

## 7 Erythritol

### 7.1 Capacity and output of erythritol in China, 2016–Nov. 2021

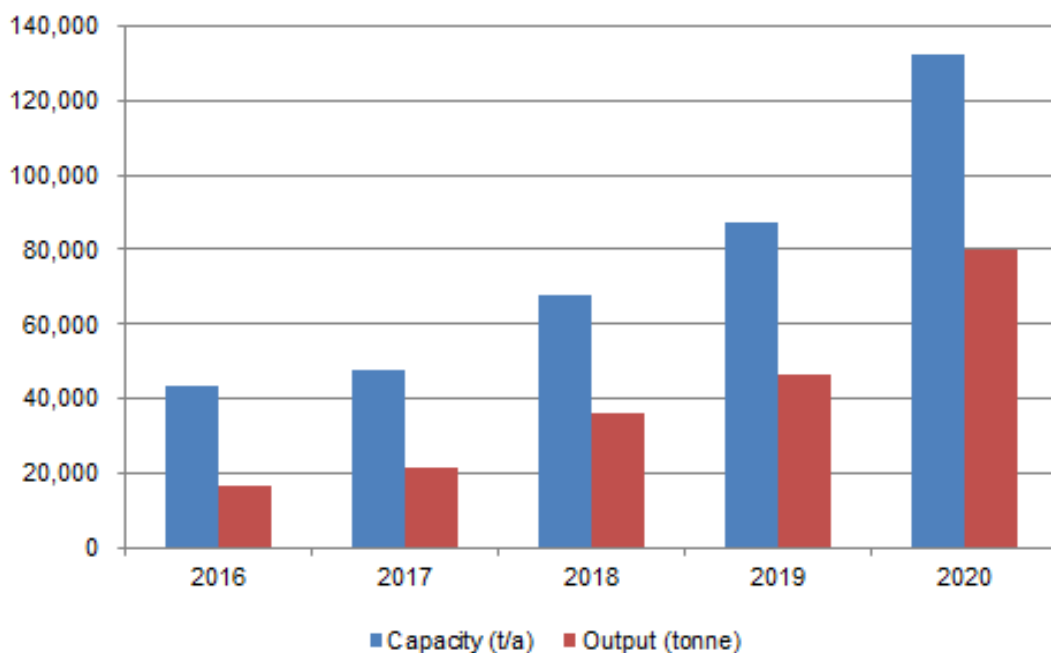
Figure 7.1-1 Capacity and its growth rate of erythritol in China, 2016–2021E



Source: CCM

The capacity of erythritol rose from 43,500 t/a in 2016 to 132,500 t/a in 2020, growing at a CAGR of 32.1% in 2016–2020, as major producers had expanded their erythritol capacity in the past few years because of the rising demand. In Jan.–Nov. 2021, six new erythritol projects in China were completed and thus the capacity of erythritol in China increased by 143,000 t/a to 275,500 t/a, doubled over 2020 level.

Figure 7.1-2 Capacity and output of erythritol in China, 2016–2020



Source: CCM

The operating rate of erythritol industry in China climbed from around 38% in 2016 to about 60% in 2020. Erythritol has become very popular, as it can be used as functional condiment thanks to its low hygroscopicity, anti-caries effect and low calorie. The output of erythritol grew from 16,400 tonnes in 2016 to 80,000 tonnes in 2020, expanding at a CAGR of 48.6%.

## **7.2 Major producers and distribution of erythritol in China, 2016–Nov. 2021**

There were three active erythritol producers in China in 2020, all located in Shandong Province.

Upon completion of a series of technical transformation projects on erythritol production since 2018, Shandong Sanyuan Biotechnology Co., Ltd. (Shandong Sanyuan) becomes the largest erythritol producer in China, with 65,000 t/a capacity and an operating rate of about 75% in 2020. Zhucheng Dongxiao Biotechnology Co., Ltd. and Baolingbao Biology Co., Ltd. (Baolingbao Biology) also enlarged production capacity and outputs in 2020, their operating rates reaching 53% and 75% respectively that year.

However, Shandong Futaste Pharmaceutical Co., Ltd. and Zibo Zhongshi Green Biotech Co., Ltd. stopped production in 2020, besides the suspension in Sichuan Anyi Biotechnology Co., Ltd. since 2018.

Table 7.2-1 Capacity and output of erythritol producers in China, 2016–Nov. 2021

No.	Producer	Abbreviation	Location	Status, as of Nov. 2021	Capacity, t/a						Output, tonne				
					Jan.–Nov. 2021	2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
1	Shandong Sanyuan Biotechnology Co., Ltd.	Shandong Sanyuan	Shandong	Active	85,000	65,000	50,000	30,000	10,000	10,000	49,000	26,600	17,000	6,000	4,500
2	Baolingbao Biology Co., Ltd.	Baolingbao Biology	Shandong	Active	33,000	20,000	10,000	10,000	10,000	4,000	15,000	9,800	9,500	7,000	4,000
3	Zhucheng Dongxiao Biotechnology Co., Ltd.	Zhucheng Dongxiao	Shandong	Active	30,000	30,000	10,000	10,000	10,000	10,000	16,000	9,000	7,700	5,500	4,200
4	Hebei Yuxing Bio-Engineering Co., Ltd.	Hebei Yuxing	Hebei	Active	40,000	/	/	/	/	/	/	/	/	/	/
5	Anhui BBKA Likang Pharmaceutical Co., Ltd.	BBKA Likang	Anhui	Active	30,000	/	/	/	/	/	/	/	/	/	/
6	Shandong Chiping Chunrui Bio-Food Co., Ltd.	Shandong Chunrui	Shandong	Active	20,000	/	/	/	/	/	/	/	/	/	/
7	Shandong Fuyang Biotechnology Co., Ltd.	Shandong Fuyang	Shandong	Active	20,000	/	/	/	/	/	/	/	/	/	/
8	Zibo Zhongshi Green Biotech Co., Ltd.	Zhongshi Green	Shandong	Idle	4,500	4,500	4,500	4,500	4,500	4,500	0	500	1,000	1,000	1,500
9	Shandong Futaste Pharmaceutical Co., Ltd.	Shandong Futaste	Shandong	Idle	3,000	3,000	3,000	3,000	3,000	3,000	0	700	800	1,500	1,100
10	Sichuan Anyi Biotechnology Co., Ltd.	Sichuan Anyi	Sichuan	Idle	10,000	10,000	10,000	10,000	10,000	10,000	0	0	0	500	1,000
11	Zibo Derun Biotech Co., Ltd.	Zibo Derun	Shandong	Stopped	/	/	/	/	/	2,000	/	/	/	/	100
<b>Total</b>					<b>275,500</b>	<b>132,500</b>	<b>87,500</b>	<b>67,500</b>	<b>47,500</b>	<b>43,500</b>	<b>80,000</b>	<b>46,600</b>	<b>36,000</b>	<b>21,500</b>	<b>16,400</b>

Source: CCM

Increasingly popular among consumers, erythritol has witnessed a sharp rise in the demand. In order to seize more market shares in the booming sector, many companies planned to establish new erythritol projects and accelerated the construction of new projects in the past two years.

In Jan.–Nov. 2021, there were six new erythritol projects built and put into production, including two expansion projects by Shandong Sanyuan and Baolingbao Biology, and four new construction in new comers.

Among them, Shandong Fuyang's 20,000 t/a erythritol project started production in March 2021. Shandong Sanyuan's 20,000 t/a and Baolingbao Biology's 13,000 t/a expansion projects were completed in H1 2021, and fully put into production in June and late-July, respectively. Hebei Yuxing's 40,000 t/a and Shandong Chunrui's 20,000 t/a production lines were put into operation in August. Up to now, these projects have seen steady operation.

In addition, BBCA Likang's 30,000 t/a erythritol project went through the first trial production successfully at the end of October, but commercial operation is yet to come.

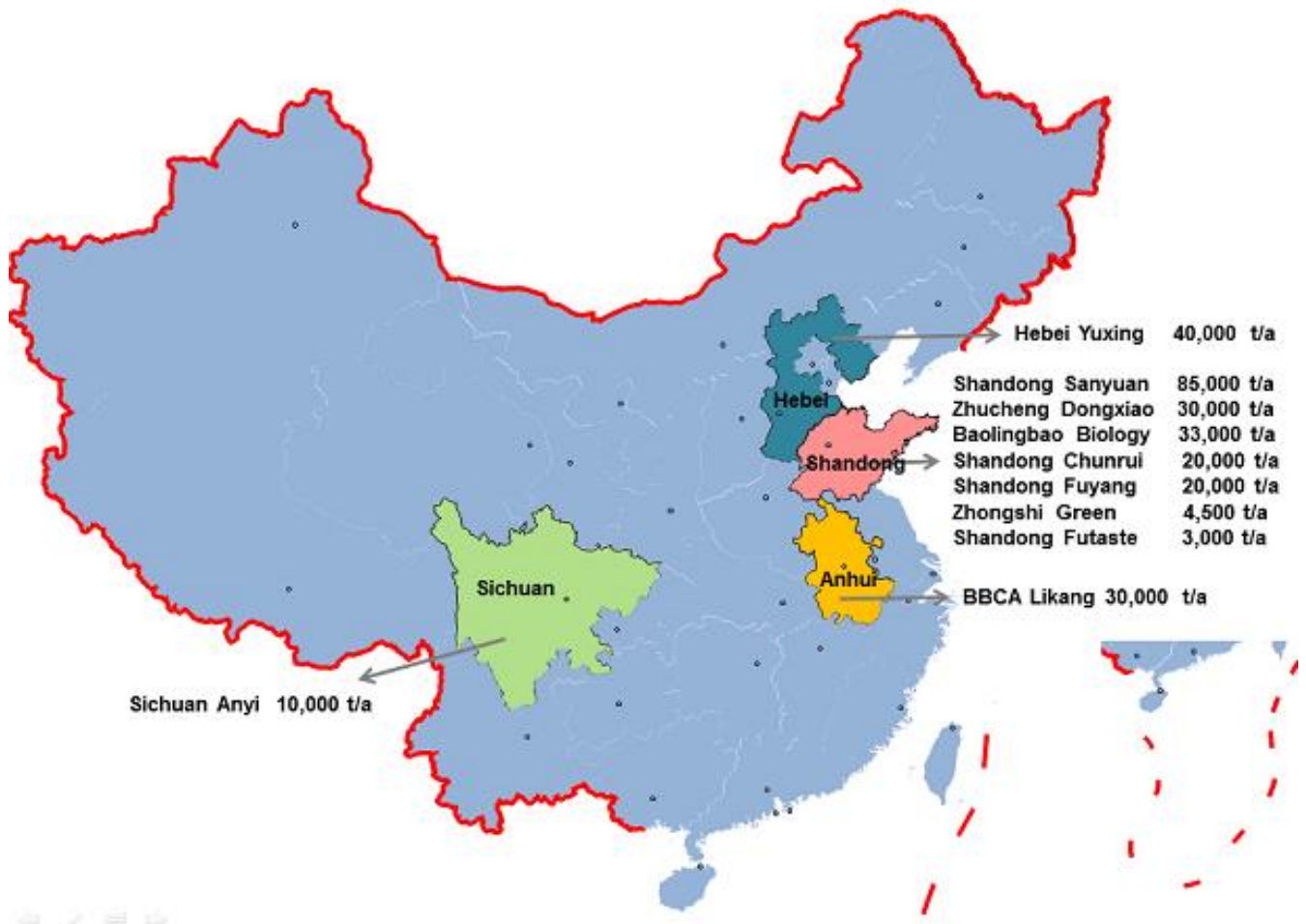
Table 7.2-2 New capacity of erythritol added in Jan.–Nov. 2021

No.	Producer	Capacity, t/a
1	Shandong Sanyuan Biotechnology Co., Ltd.	20,000
2	Baolingbao Biology Co., Ltd.	13,000
3	Hebei Yuxing Bio-Engineering Co., Ltd.	40,000
4	Anhui BBCA Likang Pharmaceutical Co., Ltd.	30,000
5	Shandong Chiping Chunrui Bio-Food Co., Ltd.	20,000
6	Shandong Fuyang Biotechnology Co., Ltd.	20,000
<b>Total</b>		<b>143,000</b>

Source: CCM

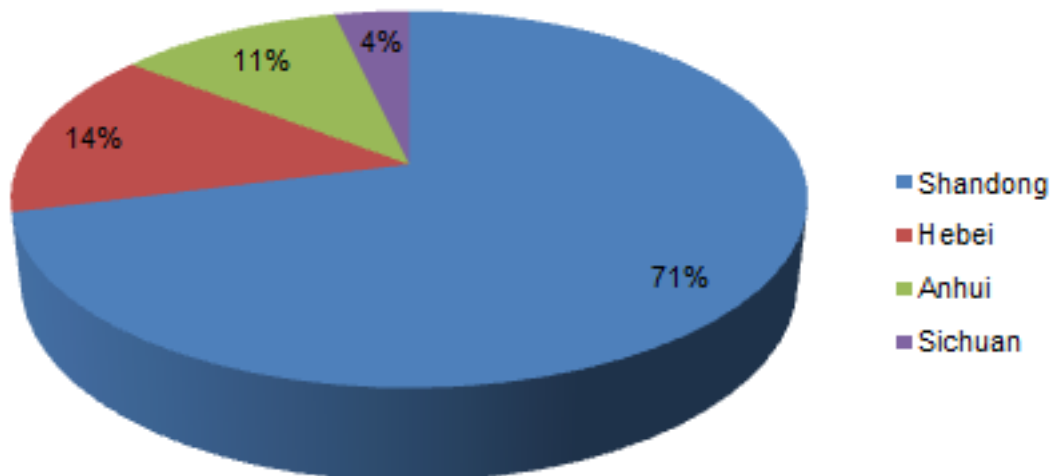


Figure 7.2-1 Capacity distribution of erythritol producers in China, Jan.–Nov. 2021



Source: CCM

Figure 7.2-2 Shares of erythritol capacity in China by region, Jan.–Nov. 2021



Source: CCM

### 7.3 Monthly ex-works price of erythritol in China, Jan. 2016–Nov. 2021

Generally speaking, the ex-works price of erythritol in China declined from 2016 to 2017. In this period, the lowest was recorded at USD2,325/t in July 2017, about 26.7% lower than the highest in June 2016 at USD3,170/t. The drop was brought about by increasingly mature production technology and pressure from declining prices of other sweeteners.

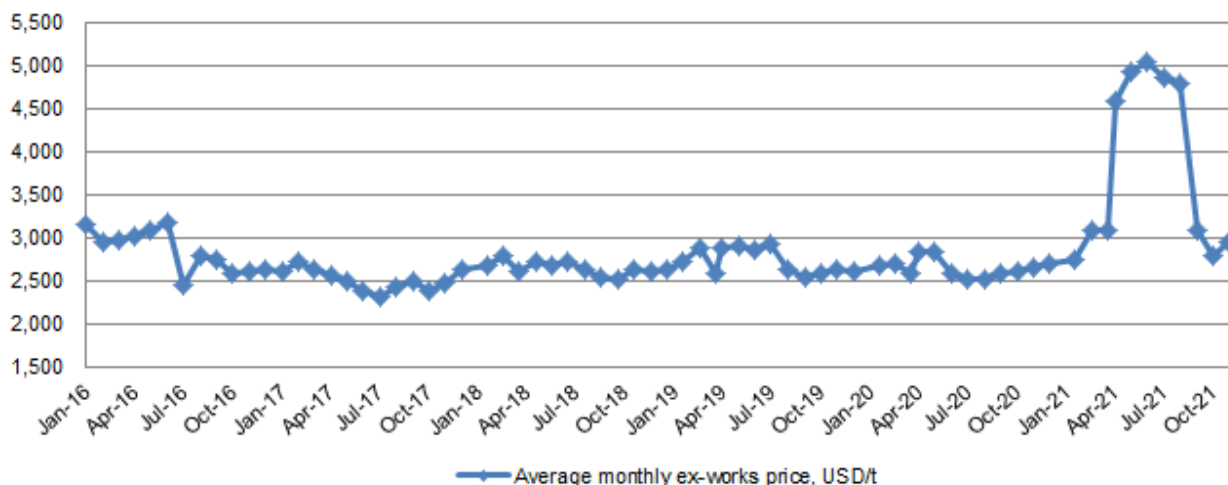
During 2018–2019, due to surges in erythritol exports and domestic downstream demand, the price of erythritol rose slightly. The annual average in 2018 and 2019 were USD2,649/t and USD2,730/t, respectively.

In H1 2020, against the COVID-19 outbreak, the price rose slightly in general due to increases in the price of its raw material corn starch and in downstream demand. In H2, the price first went down with new capacity going into production, but it soon edged up as raw material prices rose.

In April 2021, due to rapid growing demand, erythritol was in short supply and its price soared to USD4,574/t. The price stayed at such a level for several months. Along with realization of new erythritol capacity in several enterprises, the shortage eased and the price plummeted in September and dipped further in October to USD2,786/t.

Considering expanding demand in recent years, and completion and operation of many new erythritol projects, it is expected that the price of erythritol will keep relatively stable in 2022.

Figure 7.3-1 Monthly ex-works price of erythritol in China, Jan. 2016–Nov. 2021



Source: CCM

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