

I-2.3 Summary of Production Situation

Currently, the production of xylitol mainly located in Shandong province, Hebei province and Henan province, and some of them are in Jilin province, because those regions are abundant in corn cobs.

By January 2007, the domestic supply of xylitol is far from meet the market demand, which is resulted from the following reasons.

Firstly, the oversea demand to xylitol increased sharply. Danisco Cultor, one of the largest xylitol manufacturers in US has stopped production since last years. Therefore, most of the foreign consumers have to turn to China to purchase xylitol. In addition, the oversea consumers has been aware of the benefits of xylitol, especially in Japan, South Korea and the United States , therefore, most of them use xylitol in daily life instead of sugar.

Secondly, the domestic xylitol production is subjected to the supply of xylose. Up to till now, the domestic supply of xylose can not meet the market demand.

Thirdly, the domestic sugar-free food industry developed with a rapid speed, especially the chewing gum industry. Therefore, the consumption to xylitol increased.

In recent years, the number of xylitol manufacturers has been reduced. In 2001, there were around 30 xylitol manufacturers in China. As the market situation was slack, most of manufacturers had to stop its xylitol production. In 2003, there were 13 manufacturers in China. In 2006, there are only 9 active manufacturers in China.

I-4 Brief Introduction to the Production Technology of Xylitol in China

I-4.1 Different Pathways/Methods

In the past, content of Chinese xylitol product was usually 90-95% and it needed further purification in order to meet requirements for pharmaceutical and food industry. But in recent years China has been able to produce high content xylitol (to 99.5% min.) due to a series of new technique application.

Basically there are two pathways to produce xylitol in China. Usually they refer to the process of xylose, xylitol are produced by hydrogenation of crystal xylose water solution:

➤ PATHWAY1: Neutralization Deacidification Pathway:

This pathway can be expressed as follows:

Corn cob → washing → pretreatment → hydrolysis → neutralization (calcium carbonate)
→ first concentration → decolorization → first exchange → hydrogenation
→ second concentration → crystallization → separation → final product (xylitol)

I-5 Import & Export of Xylitol in the Recent in 2001~2006

I-5.1 Import analysis

Compared with the export quantity of xylitol, the import xylitol in China is little. The import quantity in recent three years reduced sharply. In 2006, only 7.78 tonnes xylitol imported to China.

Table I-5.1-1 Import quantity and unit price of xylitol in 2001-2006 (Unit: Quantity: tonne; Unit price: USD/kg)

Years	2001		2002		2003		2004		2005		2006	
Month	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price	Quantity	Unit price
Jan	-	-										
Feb	18.900	3.90										
Mar	18.900	3.90										
Apr	19.950	3.70										
May	39.900	3.70										
Jun	19.950	3.70										
Jul	19.950	3.70										
Aug	19.950	3.70										
Sep	19.950	3.70										
Oct	-	-										
Nov	-	-										
Dec	-	-										
Total	177.450	3.74										

I-6 Consumption Pattern of Xylitol in China

I-6.1 Brief Introduction to sugar-free food market

Sugar-free food is defined as containing no cane sugar or starch sugar which will increase the glucose index of the body, whereas cane sugar or starch sugar is replaced by sugar alcohol including xylitol, maltitol, isomaltitol, sorbitol, mannitol and erythritol *etc.* In Chinese sugar-free market, maltitol, xylitol, manitol and sorbitol are the major sugar alcohol applied in sugar-free food production.

From 2005 to 2006, Chinese official media commented that many species of sugar-free food still contains cane sugar, glucose or lactose then warned the customer, especially diabetes patients, to be careful of such sugar-free food. The chaos market situation occurred in Chinese sugar-free food market is mostly due to no standard and regulate rule. Besides, lack of sugar-free knowledge in most of people and manufactures also led to such situation. Nowadays, the professionals strongly recommend government to set the standard of sugar-free food for the healthcare of old people.

I-6.2 Demand Share of Xylitol in Major End Uses Segments

- Summary

Xylitol began to be consumed in China since 1990s. From the very beginning Chinese xylitol was produced for replacement of glycerin. So theoretically xylitol can be used in almost all the sections where glycerin is needed. But actually the consumption volume of xylitol was quite little in China. According to a statistics from Ministry of Sanitation, the incidence of diabetes disease is 0.6%, amounting to 7.8 million of people. If a patient intakes 20 gram of xylitol per day, the consumption volume of xylitol in China will be about 56,000t/a. But the actual situation differs quite a lot to theoretical calculation, and it is due to the following reasons: