# Newsletter

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## China Sugar & Sweeteners News Contents

## Launches/Trials

### Garjill (Tianjin) sweetener production base starts construction

Recently, Garjill Food (Tianjing) Corporation (Garjill Tianjin) invests in a high fructose project in Tianjin Taida Chemical Zone with USD20 million. The annual output of high fructose will be 0.12 million tons after the project is completed.

The construction of this project broke ground in October 2006. At present, most of the production equipments have basically been in place and staffs are well prepared. Production it will start in June or July 2007. It will become the biggest liquor sugar production base after completion.

The high fructose is refined from corn, and it will take place of sugar in different beverages. Now the America Coca-Cola Corporation uses high fructose. The market prospect for it is very bright. The application of high fructose in China beverage industry has matured and it has been accepted by many beverage enterprises.

The high fructose syrup has superior physical property and unique nutrition function, and it can improve the beverage taste. It has more application advantages than sugar, so the development of high fructose greatly threatens the sugar market.

Mr. Liu, in charge of the management of Garjill Tianjin, expresses that the construction of high fructose project has three phases requiring the total investment of RMB0.56 billion. The first phase project is located in Tianjing Taida chemical district, and the second and third phase projects are located in Shanghai and Guangzhou, respectively.

By far, the second phase project is at the stage of choosing location, and hiring engineers and technicians. Construction of the new factory at the second stage will start in the near future.

‘After the completion of the third phase project, Garjill Corporation will finish the construction of production bases from north to south in China.’ says Liu.

### Trial production of TKSE sucrose bio-auxiliary succeeds

Recently, the trial production of TKSE sucrose bio-auxiliary is successful and China Science and Technology Ministry provides one million yuan innovation fund for this project.

Tang Ming, general manager of Jiangxi Anqi Bio-engineering Corporation (Jiangxi Anqi), introduces that 80% of the sugar enterprises in China adopt sulfurous acid technology. But the sucrose products produced with this technology have the disadvantage of high sulfur content in the products, high residue in the production process, though its production cost is low compared to other technologies.

The sulphur content permitted in sugar with the sulfurous acid technology is 50 milligrams in China, while it is only 6 milligrams in developed countries. Therefore, China's sugar can't enter the overseas market. Its application in some top grade food and in medicament industry is strictly restricted.' says Tang.

Tang expresses, TKSE sucrose bio-auxiliary can be applied in the enterprises that directly use sugarcane and sugar beet to produce sugar. It has effective functions in improving sugar quality, increasing the sugar yield and declining the energy consumption. The production technology for this product has great significance to the improvement of the dominating sulfurous acid technology in China's sugar production.

Tang says that Jiangxi Anqi is actively improving its production technology and plans to export its product to foreign countries.

'The Health Authority has issued the hygienic license to us for the production of this product, and we have launched the TKSE sucrose bio-auxiliary in small-scale production, and the product has been applied in Shanglin Nanhua Sugar Corporation and tens of sugar factories in China.' says Tang.

## First isomaltulose project with bio-technique realizes industrialization

The first isomaltulose project in Guangxi Vector Bio-technique Corporation (Guangxi Vector), using the bio-technolog, has realized industrial production recently.

The first phase of this project with the investment of RMB60 million has started production, and the total investment of the project is RMB0.1 billion.

Mr. Chen, person in charge of the operation of Guangxi Vector, introduces that isomalt is processed from isomaltulose through bioconversion, taking sugar as the raw material. Isomalt is a natural nutrition sweetener, and also an ideal substitute of sugar. It can be applied in sugar-free products and products with low calorie, such as: candy, chocolate and tablets for cough, throat tablets and compressed peppermint tablet.

Chen introduces that the annual production capacity of isomalt is ten kilotons in China at present. Guangxi Vector started to research isomaltulose from 2001, and the trial production started from 2004. 'We have finished the construction of first phase project by far.' says Chen.

'There are three big isomaltulose enterprises in foreign countries, and in China, there are only two isomalt enterprises, namely Guangxi Vector and Shandong Xinhui Ecology Medicament Corporation.'

Chen says: 'the isomalt products of Guangxi Vector are mainly exported, and we are trying to open the domestic market at present. There are several companies such as China Guangxi Golden Throat Corporation, Guangxi Guilin Sanjin Medicine Corporation and Shanghai Johnson Pharmacy Corporation trial using the isomaltulose from Guangxi Vector.'

Chen believes that the market prospect of isomalt is very bright, as it is now being widely used in Europe. Though the application in China is not wide; the demand of isomalt will increase rapidly with people paying more and more attention to the health.

## Oligose base launches production in Shandong Yucheng

The oligose base of China launches production in Shandong Yucheng on March 20th 2007.

Yu Xiaodong, director of nutrition and development center introduces that Yucheng started to be engaged in the development of functional sugar from 1990s. Under government guide, it introduced advanced technology and tried to industrialize research fruits and carried out technology innovation by itself. With such series efforts, Shandong Yuchen successively carried out industrial production of oligomeric isomaltose, xylose, oligomeric xylose and crystal maltital, the leading products representing the overall level of functional sugar.

At present, functional sugar production chain has been formed in Shandong Yucheng, with Shandong Baolingbao, Shandong Longli and Yucheng Futian as the leading enterprises. The functional sugar product chain has formed there, with oligomeric isomaltose, xylose, oligomeric xylose and maltitol as the major products.

The integrated production capacity of functional sugar in Shandong Yucheng has soared to 400,000 tons per year, and the output and sales there occupy 80% of domestic market and 25% of international market. Shandong Yucheng has become the biggest function sugar industry base in China.

The oligose production is taking Baolingbao as the center. Liu Zongli, president of Baolingbao introduces, the oligose of Baolingbao occupies 70% of domestic market, and it is also exported to Occident, Asia-Pacific, Arica and some other countries. Baolingbao is cooperating with Coca Cola, Nestle, Johnson, Bayer, Danone and Perfect, and it has become an important part in in international supply chain.

Several beverage and milk product factories are using oligose as the raw auxiliary materials, but the advertisement for oligose hasn't been popular and the majority of people don't know about oligose. So the establishment of the oligose base can promote the development of nutrition industry and the wide application of oligose can improve the health condition of people.

## ■ Supply and Demand

### Sugar price rise stimulates the expansion of starch sugar

The sugar supply has been insufficient since the sugar refining period in 2005 and 2006,. The sugar price in 2006 has gone up to more than RMB5,000 per ton from RMB3,600 per ton, rising about RMB2,000 year on year. Though the price has dropped a little some time earlier, it is still very high now. The main reason of sugar shortage is the drought in sugarcane production place.

The sugar price rise stimulates the starch sugar enterprises to expand their output. When the price of starch sugar is higher than the price of sugar, most of food enterprises will use sugar in their products. However, when the price of sugar is higher than starch sugar, starch sugar will be used in food industry to take place of sugar, or they substitute each other to a certain degree.

Though the price of starch sugar is influence by the production and transport cost, its production cost will be lowered down gradually along with the increasing output and improving production technology. Therefore, more and more enterprises are paying attention to starch sugar.

The two latest starch sugar projects being launched before the first half of 2007 are in Shandong Luzhou Group and Henan Caixin Group. Shandong Luzhou Group finished the project of 200,000t/a starch sugar. Henan Caixin Group launched 50 kilotons high purity maltonse project in the end of 2006.

The number of starch sugar enterprises with the capacity exceeding 30,000t/a has approached 50 in China. The starch sugar production has been increasing with the annual growth rate of about 40% in recent years. The leading starch sugar enterprises of Luzhou Biology Science and Technology Corporation and Xiwang Group both were listed, in Singapore stock market and Hong Kong stock market respectively in 2005. Through the financing expanding, the annual capacity of both enterprises has reached 0.8~1 million tons.

The starch sugar output surged 22% in China in 2005, increasing by 94,600 tons. The increased output snatched 0.7 million tons of sugar share. The sugar market information issued by the State Agriculture Department shows that the output of starch sugar will reach 5.2 million tons in 2006 and it will substitute sugar for around 0.5 million tons. By far, the integrated scale of starch sugar industry in China is the second in the world, only next to the US.

## Market Spotlight/Analysis

# Current situation of China starch sugar industry

- **Production and consumption of China starch sugar**

The sugar production and consumption policy of China advocates that mainly using sugar in food industry, especially in the time of sugar in short supply, and starch sugar is only the auxiliary. Due to the advanced technology of starch industry, the high quality, the precise enterprises intensive management and the deep restructuring, the cost of starch sugar production declines and the price starts to lower than sugar. The starch sugar market extends gradually, becomes the important complement of sugar. In the year 1999, the starch sugar output is less than 0.6 million tons, and in the year 2004, the output reaches 3.47 million tons. Especially, the crystalline dextrose and beer syrup develop quickly.

TABLE Consumption of sugar and starch sugar in the world

| **Country** | **Sugar** (kilotons) | **Starch sugar** (kilotons) |
|---|---|---|
| EU | 18,000 | 2,000 |
| America | 4,000 | 1,400 |
| Japan | 2,000 | 2,000 |
| China | 10,000 | 3,000 |

It can be found from above table, the sugar output of China is next to America, and takes the second place of world. By far, the level of average per capita consumption of sugar is on the low side in China, so we have the big development space in starch sugar.

- Prospect and product structure of starch sugar

The consumption proportion of sugar and starch sugar is different in different countries, and in America, they mainly use starch sugar, and the other countries mainly use sugar.

TABLE Consumption structure in different countries, unit: kilotons

| **Country** | **Sugar** | **Starch Sugar** | **Golden Syrup** | **Maltose and Corn Syrup** | **Crystalline Dextrose** |
|---|---|---|---|---|---|
| America | 6,900 | 14,850 | 10,840 | 3,410 | 600 |
| EU | 14,600 | 2,060 | 190 | 1,700 | \ |
| Japan | 2,320 | 1,880 | 850 | 850 | 100 |
| Korea | 850 | 900 | 480 | 400 | 30 |
| China | 8,800 | 2,000 | 20 | 1,500 | 300 |

If the starch sugar consumption is high in a country, the starch sugar price of this country must be higher than the sugar price. So the price of starch sugar decides the market proportion of it. In recent years, the starch sugar price of China is RMB 2,300~2,500 per ton, and the sugar price is RMB 2,900~3,100 per ton, so the starch sugar develops quickly. But because the high cost, so high fructose syrup lack of competition compare to sugar.

There are more than ten thousand food enterprises in China which the compounding is sugar, but a majority of factories is too small and the automation level is low, so the liquid sugar is not suitable. So the proportion of solidified starch sugar should be the direction of starch industry.

The beer syrup is the only liquid starch sugar that will get the large development. The beer output of China is 23.8 million tons in 2002, and reaches 29 million tons in 2004, takes the first place in world. The enterprises of beer production take kindly to the beer syrup price of RMB 2,000 per ton. The starch content of rice is 80%, but if they use beer syrup directly, can reduce the production process, improves the sugar content of fermentation liquor, and increase 20% production capacity. So if they use malt syrup to instead of rice, can decline the production cost.

The food enterprises want to use golden syrup to instead of sugar in China, in order to reduce the sugar consumption. And the government try out in some regions, but fails, the reason is the price of golden syrup higher than sugar. The golden syrup price is RMB 2,500 per ton in China, the crystalline sugar price in America is USD400, so the crystalline dextrose starts to export to Europe and America.

- **Improve the competition capacity of starch sugar industry**

First, the enterprises want to prove the production quality. In recent years, the enterprises strengthen the quality of products, so the crystalline dextrose has high quality. But we should pay more attention on insoluble granule, and we have a large distance with the foreign countries in the liquid sugar.

Second, adopt the new isolation technique.

- **Development of starch sugar**

In America, The total output of corn deep processed is 15%, and in China is 10%, so the capacity of producing starch sugar is limited. The productive capacity of starch sugar will reach 5 million tons in 2008 by estimate.

## Plan and Trend

# Prospect of China's sugar market in 2007

**The sugar consumption of China**

In recent years, sugar consumption in China has the following characteristics:

1. The average sugar consumption is 10,300~10,600 kilotons in the recent five grinding seasons.
2. The import volume of sugar occupies 8~10% of the annual sugar consumption.
3. The sugar consumption increases because of quick development of national economy, improvement of living standard and the strict restriction of saccharin output and sales.
4. The sugar consumption growth slows down in the recent five grinding seasons. The main reasons are: the sugar market in big cities has been saturated, while the sugar market in the countryside waits to be further explored; starch sugar is replacing part of sugar; the advertisement for proper sugar consumption is not enough.
5. The sugar consumption during 2005~2006 grinding season is about 10,800 kilotons; and it is predicted to reach 11,500 kilotons during the season of 2006~2007.

TABLE Changes of sugar consumption in the recent years

| Year | Output (kilotons) | | | Net import amount (kilotons) | Average consumption (kilotons) | Import sugar (%) |
|---|---|---|---|---|---|---|
| | Total | Sugar | Beet sugar | | | |
| 01～02 | 8,497 | 7,470 | 1,027 | 857 | | |
| 02～03 | 10,640 | 9,406 | 1,241 | 671 | | |
| 03～o4 | 10,024 | 9,436 | 587 | 1,129 | | |
| 04～05 | 9,174 | 8,571 | 603 | 1,031 | | |
| 05～06 | 8,815 | 8,008 | 807 | 1,060 | | |
| **Average** | **9,431** | **8,578** | **853** | **905** | **10,336** | **8.76** |

*Source: China Sugar Association, China custom office*

**Balance of supply and demand of sugar in 2006~2007 grinding season**

According to the sugar planting area and the sugar output of the recent five grinding seasons, the sugar output during 2006~2007 grinding season is expected to reach 10,860 kilotons.

Actually, with the imported sugar, the supply can basically meet the demand in China now.

We can solve the balance problem with the following methods: first, supplement the national sugar conservation with the sugar imported from Cuba instead of launching it in the market. Second, the government should store up a part of sugar produced in the peak season. Third, export some finished sugar to foreign countries. Finally, control the sugar import by setting up limit on the highest price of domestic sugar.

**In order to improve the development of sugar industry in 2007, Chin's sugar producers should**

1. Accelerate the transform of their production from quick production with large quantities to the production of products with high quality, good effect. They should also pay more attention to the environment-friendly development in the production, especially in enhancing product quality, declining water consumption and coal consumption, accelerating the ecology park construction and supporting the construction of new countryside.

2. Stop relying on international sugar market, protect sugar production in China, and ensure the balance of demand and supply.

   90% of the sugar in China's market is domestic sugar. Though it is not difficult to achieve the self-sufficiency, 10% of import sugar from other countries is necessary for maintaining the sugar balance between supply and demand and the international sugar trade.

   In 2007, China will store up sugar produced in the peak season at appropriate price. This indicates that the government starts to take active measures for the balance between supply and demand.

3. The enterprises should catch the opportunity to explore new market, and enlarge the sugar consumption.

   As China is prepared for the 2008 Beijing Olympic Games, excellent service for the events and exhibitions is needed. Sugar enterprises should take this opportunity and provide high quality sugar to the consumers with appropriate price.

4. The enterprises will strengthen the brand promotion.

   The sugar manufacturing enterprises must pay more attention to the brand promotion and try to expand their reputation in the market and increase their competitiveness.

## ■ Policy and Legislation

# NPC members call on enacting sugar industry law

More than 30 NPC members from Guangxi suggest enacting China sugar industry law, because the sugar administration interim measure can't solve the practical problems existing in China's sugar industry now.

The sugar administration interim measure was enacted by NPB, Economic Trade Committee, Department of Agriculture, National industrial conference board. This interim measure has had some positive impact on the development of sugar industry in China. For example, it established the mechanism of sharing risks and interests between sugar planting farmers and sugar processing enterprises.

But in the recent years, more new problems have emerged in the sugar production, such as: the confusing management of sugar cane district, the disordered competition between enterprises, fights for raw material. The interim measure can no longer solve these problems. At the same time, with the cancelling of taxes on special agricultural products, local governments in many areas are no longer that enthusiastic about the management of sugar industry. Therefore, it is in urgent need for a new sugar industry law to be enacted, to protect the development of sugar industry and to reduce the negative impact brought by the fluctuation of international sugar market.

Suggestions from the NPC members on the sugar industry law:

1. Clearly define the management system of sugar production zones. The government should carry on the compartmentization management measure, perfect the sugar acquisition order and price mechanism, ensure the benefits of sugar farmers, establish the mechanism of risk and interest sharing between farmers and sugar processing enterprises, strengthen the construction of infrastructure, increase investment in water resource facilities, mechanization of farming and technology.

2. Clearly define the sugar production control. The government should practice the production license system and quotas management system, improve the production mode of sugar, encourage the sugar producers to adopt advanced technology, practice the production license and management system for sweeteners.

3. Clearly define the distribution management of sugar. The government should strengthen the distribution network of sugar, enhance the circulation efficiency, reduce the circulation cost, enact policies stabilizing the market, enact the sugar distribution management measure, improve the electronic business trade platform, and strengthen the construction of sugar physical distribution system.

4. Clearly define the import and export management of sugar. The government should pay more

attention to protecting sugar industry. First, the government should not fully open the market. Second, continue to carry on the quota system, control the tariff quota of imported sugar with the volume below 1945 kilotons. Finally, dispense the sugar import tariff quota to stabilize the market price.

5. Clearly define the system for sugar reservation. The government should set up appropriate price limits for the lowest price and highest price, and strengthen the management on the price of sugar. The price ranges should be set by taking into the consideration of the benefits of sugar planting farmer, sugar processing enterprises and sugar consumption enterprises.

6. Clearly define the requirement for providing risk aid fund to sugar industry. The government should establish the domestic sugar price system, and to adjust the sugar price by providing the sugar industry with risk aid fund, purchase sugar when the sugar price is lower than the required level, and encourage the import of sugar when the sugar price is higher than the required level.

## ■ Area Dynamics

### Xinjiang Publishes short-term plan of sugar collection and storage

National Development and Reform Commission and The People's Bank of China require that Xinjiang enact short-term plan of sugar collection and storage in order to guarantee the income of sugar planting farmers and the regular production in sugar enterprises. So, Xinjiang Development and Reform Commission publishes the 10,640 tons' short term sugar collection and storage plan together with relevant ministry of Xinjiang. Among the 10,640 tons sugar, 8,000 tons will come from Akesu Hengfeng Sugar Company and 2,640 tons from Xinjiang Fuhai Shanhe Food Company.

In fact, the short-term plan of sugar collection and storage has been published at the beginning of grinding season recently. It is estimated that this policy will have little impact on sugar business.

Below is the analysis on the influence of this policy:

- ✓ Sugar price for the collection and storage hasn't been settled. The influence on sugar market hasn't been felt in the short term.
- ✓ The risk of sugar collection and storage is undertaken by sugar manufacturers.
- ✓ This policy is only a short-term action and it has no long-term influence on the sugar industry.
- ✓ Total sugar volume in the market hasn't bee not reduced, and this policy will not change the regular development of sugar market.

However, this policy can to some extent, relieve the stress of raw material in the sugar production and push the sugar industry toward the healthy and stable development.

# Increasing sugar price brings good chances for Shandong starch sugar enterprises

The starch sugar, which takes cornstarch as the major raw material, can replace sugar. And corn sugar is widely applied in candy, drinks and sugarless food. The price increase of sugar brings good opportunities for Shandong starch enterprises.

The starch sugar in China contains more than 20 varieties, such as xylose, xylitol, high fructose syrup and oligomeric isomaltose. The starch sugar output in Shandong is the largest in China. For example, Shandong Baolingbao occupies the largest share of the domestic oligomeric isomaltose market, Shandong Luzhou the largest of maltose syrup market and Shandong Xiwang the largest of crystalline dextrose market.

Compared to sugar, starch sugar is functional sugar, such as its varieties of oligose, xylitol, high fructose syrup and so on. Starch sugar can not only provide nutrition to the body but can also promote people's physiological function. However, starch sugar application in China is restricted by its higher price than sugar, and Chinese traditional consumption custom. The starch sugar consumption occupies 60%~70% of all the sugar consumption in America and Europe, and the sugar consumption and starch sugar consumption in Japan and Korea is 50:50, while in China, starch sugar only occupies 20% of the total consumption.

But since the sugar price increased from the latter half of 2006, this situation changes gradually and the sugar price increased to RMB5,000/t. So the consumption of fructose syrup or other starch sugar components has increased in drinks and dairy food formulations.

During the International Food Additive Exhibition in China this March, Baolingbao, Longli, Futian and other five functional sugar enterprises were present. They signed contracts with Wahaha, Moutai, CocaCola and other 62 enterprises for more than RMB18 million. By far, Baolingbao provides 60 tons products per day to CocaCola. Along with the demand increase, the price of starch sugar increases too. For example, the price of high fructose syrup has increased by 5%~10%.