

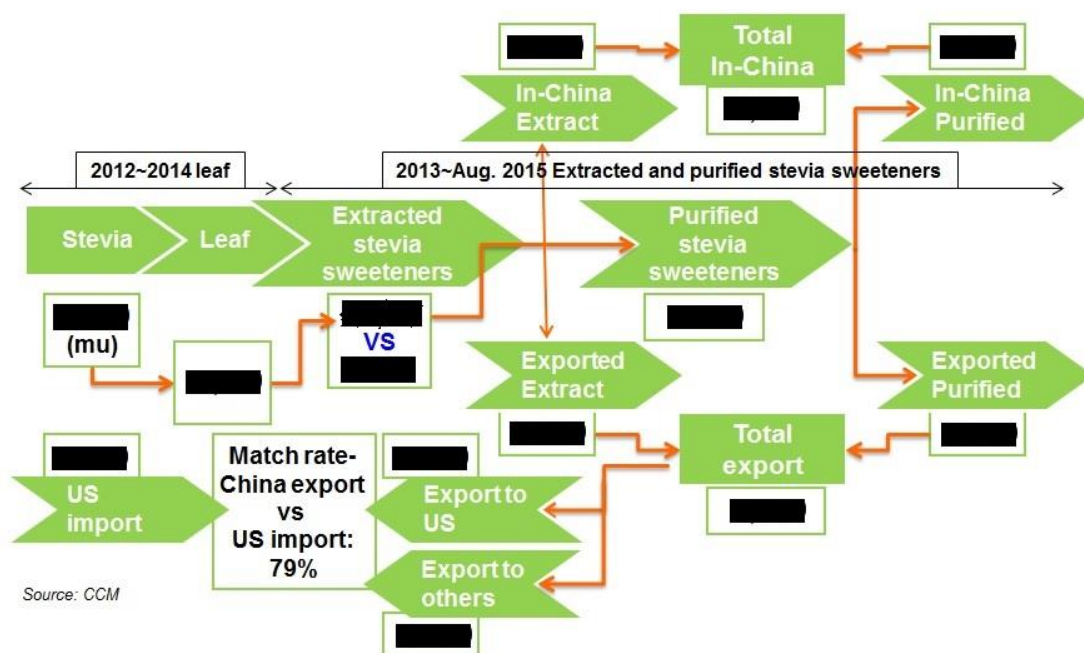
**Note: Key data/information in this sample page is hidden, while in the report it is not.**

## 1 Overview of stevia sweetener industry value chain and its dynamics in China

### 1.2 Overview of China's stevia sweetener value chain by volume and player

#### 1.2.1 Flow of China's stevia sweetener value chain by volume

Figure 1.2.1-1 Flow of China's stevia sweetener value chain by volume, 2013~Aug. 2015



#### Notes:

1. Data scope inconsistency between stevia area & leaf output: Stevia sweeteners are usually processed from leaves harvested in prior year instead of the same year.
2. Two figures for extracted stevia sweeteners: XXX (tonnes) is its actual output during 2013~Aug 2015, while XXX (tonnes) is its output calculated based on leaf output during 2012~2014: 1 tonne of extracted stevia can be extracted from 10 tonnes of leaves with no impurities.
3. Unit: tonne, except mu for stevia area.

Source: CCM

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### Features of China stevia value chain in recent years

**From stevia leaf output to stevia sweetener output:** It usually takes 10 tonnes of stevia leaves to extract one tonne of stevia sweeteners. However, the inconsistency between data of extracted stevia sweetener output calculated from stevia leaf output and the actual output data (domestic sales+export) is mainly attributed to two factors.

- ✓ First and the most important factor is the inventory of stevia leaf and stevia sweeteners. It is quite common that stevia sweetener processors have inventories of stevia leaves and stevia sweeteners. That means not all the leaves they purchase in a year are used up in the same year but may be in two or three years, and not all the stevia sweetener they process in a year are sold out in the same year, but in two or three years too.
- ✓ Second, the time inconsistency of stevia leaf harvest and stevia sweeteners processing: stevia leaf harvest and purchase in China usually takes place between July and the next March while stevia sweetener processing has not such seasonal distribution. That means, for example, some of the stevia leaves grown in 2015 might be purchased and used in the next year of 2016.

**Stevia sweetener extraction to stevia sweetener purification:** It usually takes 2.5 tonnes of extracted stevia sweetener to purify one tonne of high purity stevia sweeteners and at the same time producing 1.5 tonnes of low purity stevia sweeteners. Therefore, in theory, the volume of extracted stevia sweetener used for purification in China should be equal to the output of high purity stevia sweeteners plus that of low purity stevia sweeteners, with 40% for the former and 60% for the latter. But in reality, sales of these two types of purified stevia sweeteners, taken as their output in this study, vary according to their market situation and inventory is the key reason for the inconsistency. Take the year 2013's volume of extracted stevia sweetener used for purification as example: the XXX tonnes of extracted stevia sweetener should be able to be purified into XXX tonnes of high purity stevia sweetener and 870 tonnes of low purity stevia sweetener. However, their actual sales that year were XXX tonnes and XXX tonnes respectively.

**Data of extracted stevia sweetener used for purification in China:** as explained in the above note, it is difficult to know the accurate data of the actual volume of extracted stevia sweetener used for purification in China, CCM adopts the total output of high purity stevia sweetener and low purity stevia sweetener as the data for extracted stevia sweetener used for purification in China.

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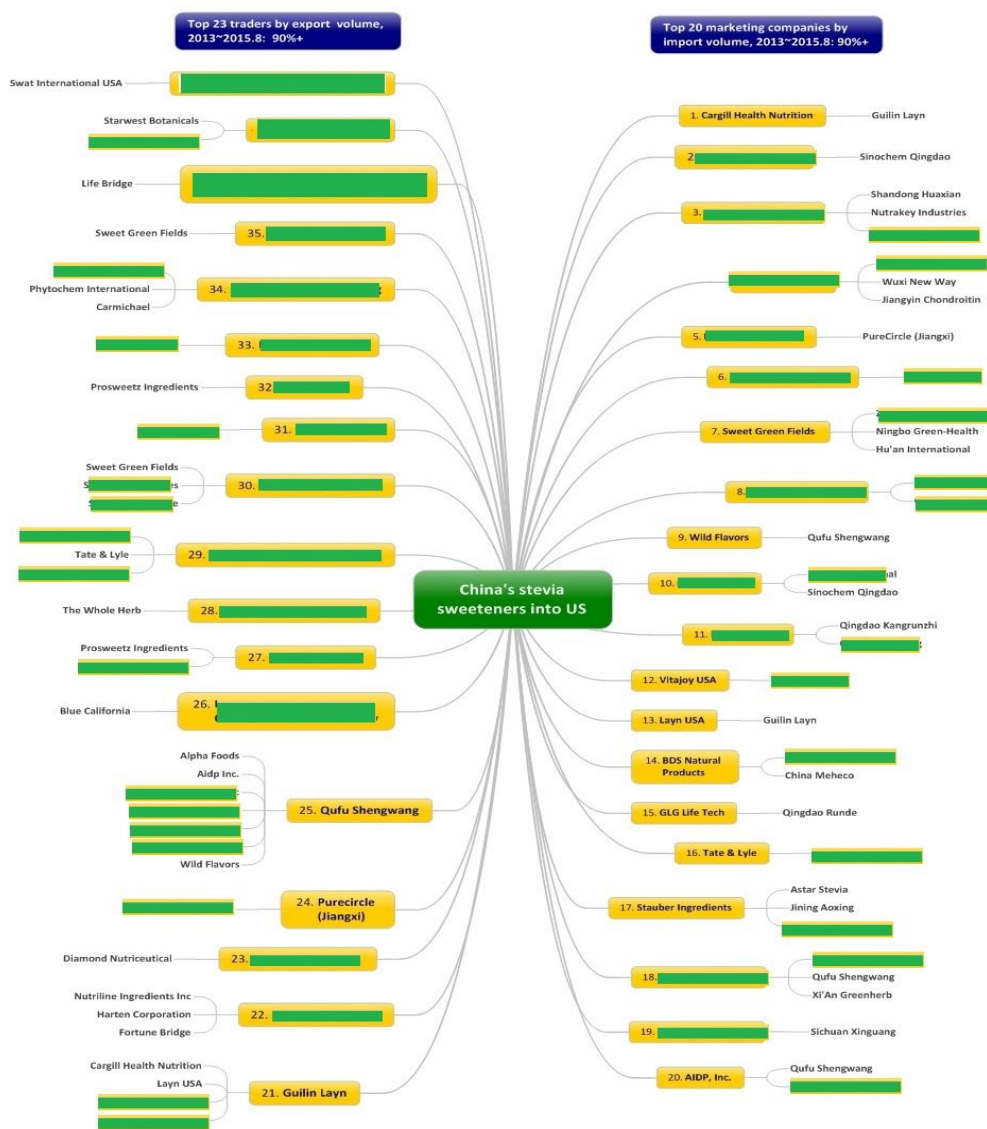
### 1.2.5 Flow of China's stevia sweeteners from traders to US marketing companies by player

The US leading marketing companies by import volume of stevia sweeteners from China have mostly established relatively fixed, or even exclusive cooperation relations with Chinese suppliers. Below are the top marketing companies by import volume from 2013 to Aug. 2015. Among them, the followings have formed fixed cooperation relations, or are subsidiaries or parent companies of China's stevia sweetener processors or their subsidiaries directly.

- Cargill with Guilin Layn: exclusive, but now Zhucheng Haotian is to replace Guilin Layn to become the most important stevia sweetener supplier to Cargill.
- Nutrilite Ingredients with XXX;

- Diamond Nutraceutical with XXX;
- Blue California with XXX and its two subsidiaries: Wuxi New Way Biotech Co., Ltd. and Jiangyin Chondroitin Bio-Products Co., Ltd.
- Sweet Green Fields with XXX via Hu'an International before 2015, and now with XXX;
- Wild Flavors with Sunwin, the parent company of XXX and its trade company XXX.

Figure 1.2.5-1 Flow of China's stevia sweeteners from traders to the US marketing companies, 2013-Aug. 2015



Source: US Customs and CCM

### 1.3 Overview of China's stevia sweetener value chain by price

Price movement from stevia leaves to extracted and purified stevia sweeteners: As price of stevia leaves accounted for 90% of extraction cost and its market price rose from about USDXXX/t in 2013 to over USDXXX/t in Jan.-Aug. of 2015, cost of extracted stevia sweeteners increased with a CAGR of over XXX% during 2013-Aug. 2015. However, the market price failed to keep growth with stevia leaves, so that the profit of extracted stevia sweeteners has reduced. Similarly, cost of high purity stevia sweeteners has increased driven by rising cost of raw material extracted stevia sweeteners, which accounted for XXX% of purification cost. On the other hand, market price of high purity stevia sweeteners rose slightly and sales prices of low purity stevia sweeteners has declined. Profit of purified stevia sweeteners dropped in 2013-Aug. 2015.

Figure 1.3-1 Market price of stevia leaves, extracted and high purity stevia sweeteners in China, 2013-Aug. 2015



Notes:

- 1: Stevia leaves price here is the average quotation from planters to traders, for stevia leaves with 35% impurities.
- 2: Market price of stevia leaves is multiplied by 10 to present with prices of extracted stevia sweeteners and purified stevia sweeteners in the same figure.
- 3: High purity stevia sweeteners here refer to specifications of RA 95 and above, while RA80~90 are not covered.

Source: CCM