

# **Production and Market of Glufosinate-ammonium in China**

**The Third Edition**

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## Contents

<b>Executive summary .....</b>	<b>1</b>
<b>Introduction and methodology .....</b>	<b>3</b>
<b>1 Production .....</b>	<b>5</b>
<b>1.1 Production of glufosinate-ammonium technical in China, 2012–H1 2017 .....</b>	<b>5</b>
<b>1.2 Production of glufosinate-ammonium formulations in China, 2012–H1 2017 .....</b>	<b>7</b>
<b>2 Producer .....</b>	<b>8</b>
<b>2.1 Producers of glufosinate-ammonium technical in China, 2012–H1 2017 .....</b>	<b>8</b>
<b>2.2 Producers of glufosinate-ammonium formulations in China, 2012–H1 2017 .....</b>	<b>10</b>
<b>3 Production technology .....</b>	<b>11</b>
<b>4 Export .....</b>	<b>12</b>
<b>4.1 Export of glufosinate-ammonium technical in China, 2012–H1 2017 .....</b>	<b>15</b>
<b>4.2 Export of glufosinate-ammonium formulations in China, 2012–H1 2017 .....</b>	<b>17</b>
<b>5 Price .....</b>	<b>19</b>
<b>6 Domestic consumption .....</b>	<b>20</b>
<b>7 Conclusion .....</b>	<b>22</b>

### LIST OF TABLES

Table 2-1 Status changes of main glufosinate-ammonium producers in China, 2012–H1 2017

Table 2.1-1 Capacity and output of glufosinate-ammonium technical producers in China, 2012–H1 2017

Table 2.2-1 Output of glufosinate-ammonium formulations producers in China, 2012–H1 2017

Table 6-1 Planting areas of glufosinate-ammonium's main target crops in China, 2012–2016, '000 ha

Table 6-2 Application parameters of glufosinate-ammonium in main target crops in China, 2016

### LIST OF FIGURES

Figure 1.1-1 Capacity and output of glufosinate-ammonium technical in China, 2012–H1 2017

Figure 1.2-1 Output of glufosinate-ammonium formulations in China, 2012–H1 2017

Figure 4-1 China's export volume of glufosinate-ammonium, 2012–H1 2017

Figure 4-2 Export destinations of China's glufosinate-ammonium by export volume and share, 2012–2016, tonne

Figure 4-3 Export destinations of China's glufosinate-ammonium by export volume and share, 2016, tonne

Figure 4-4 China's export volume of glufosinate-ammonium technical and formulations, 2012–2016

Figure 4.1-1 Monthly export volume of glufosinate-ammonium technical in China, 2016–H1 2017

Figure 4.1-2 Export destinations of China's glufosinate-ammonium technical by export volume and share, 2012–2016, tonne

Figure 4.1-3 Export destinations of China's glufosinate-ammonium technical by export volume

and share, 2016, tonne

Figure 4.2-1 Monthly export volume of glufosinate-ammonium formulations in China, 2016–H1 2017

Figure 4.2-2 Export destinations of China's glufosinate-ammonium formulations by export volume and share, 2012–2016, tonne

Figure 4.2-3 Export destinations of China's glufosinate-ammonium formulations by export volume and share, 2016, tonne

Figure 5-1 Monthly export prices of glufosinate-ammonium 95% technical and glufosinate-ammonium 200g/L AS in China, Jan. 2012–May 2017

Figure 6-1 Consumption of glufosinate-ammonium in China, 2012–2016

Figure 6-2 Consumption pattern of China's glufosinate-ammonium by main target crops, 2016, tonne

## 1. Introduction

### Research scope and targets

**Target:** This study aims to discover the situation of production and producers, export, price, as well as consumption of both glufosinate-ammonium technical and its formulations in China.

Region scope: China

**Time scope:** 2012–H1 2017, except consumption chapter with time scope of 2012–2016

## 2. Approach for this report

The report is formulated by methods as follows:

### 1. Desk research

The sources of desk research are various, including published magazines, journals, government statistics, industrial statistics, customs statistics, seminars as well as information from the internet. A lot of work has gone into the compilation and analysis of the obtained information. When necessary, checks have been made with Chinese suppliers regarding production information.

### 2. Telephone interview

CCM has carried out extensive telephone interviews in order to survey the actual production and producers' situation of glufosinate-ammonium in China.

Interviewees cover the following:

- Key producers
- Key traders
- Associations
- Experts

### Data processing and presentation

The data collected and compiled are sourced from:

- CCM's database, ValoTracer
- Published articles from periodicals, magazines and journals, and third-party databases
- Statistics from governments and international institutes
- Telephone interviews with domestic producers, service suppliers, governments, etc.
- Third-party data providers
- Comments from industrial experts
- Professional databases from other sources Information from the internet

The data from various sources have been combined and cross-checked to make this report as precise and scientific as possible. Throughout the process, a series of internal discussions took place in order to analyse the data and draw conclusions from them.

### 3. Executive summary

China's glufosinate-ammonium production of both technical and formulations, has maintained a spectacular growth in 2012–2016, compared with that in 2007–2011. Soaring overseas demand and XXX are the two most important factors contributing to the dramatic increase in 2012–2016.

China's capacity of glufosinate-ammonium technical increased rapidly from XXX t/a in 2012 to XXX t/a in 2016, with a CAGR of XXX % in 2012–2016. Production growth is also rapid—volume surging from XXX tonnes to XXX tonnes during the same period at a CAGR of XXX %.

China's output volume of glufosinate-ammonium formulations has increased significantly in 2012–2016, from XXX tonnes to XXX tonnes. The increase was mainly boosted by the rocketing demand from both domestic and overseas markets, decreasing production cost and improving product quality of China's glufosinate-ammonium formulations thanks to domestic producers' technology improvement.

As of June 2017, there are XXX glufosinate-ammonium technical producers in China, XXX of which have been active in 2016 and the rest haven't produced any glufosinate-ammonium technical in 2012–H1 2017 since they just launched production in 2016. Among the XXX active producers in 2016, XXX Co., Ltd., XXX Co., Ltd. and XXX Co., Ltd. are the top three suppliers by output.

Despite the increase in number of registrations of glufosinate-ammonium formulations, there are few large producers in China. As of 2016, only five producers had an annual output of more than 100 tonnes glufosinate-ammonium formulations.

There are little differences among the production processes of domestic manufacturers in the industrial production of glufosinate-ammonium. The cost of this production technology is high and there are lots of pollution generated. However, another production technology for glufosinate-ammonium, acquired by XXX only, needs low cost and generates little pollution. In recent years, Chinese producers have improved the production technology for glufosinate-ammonium, resulting in lower production cost and improved quality of the product.

China's export of glufosinate-ammonium has witnessed considerable increases, surging from XXX tonnes in 2012 to XXX tonnes in 2016, thanks to robust demand from overseas market. The export destinations of China's glufosinate-ammonium have been expanding, from XXX in 2012 to XXX in 2016. China's export volume of glufosinate-ammonium technical has accounted for about XXX of China's total export of glufosinate-ammonium in 2012–2016.

In 2012–2014, the export price of China's glufosinate-ammonium, especially its technical, kept growing slightly because of supply shortage. However, it presented a downward trend in general since 2015, thanks to Chinese producers' continuous capacity expansion and

production cost reduction because of technology improvements in recent years. As of July 2016, due to increasingly stringent environmental requirements, coupled with a comprehensive ban on sales and use of paraquat AS in China, resulting in increased demand for glufosinate-ammonium, the price rebounded.

Domestic consumption of glufosinate-ammonium had increased year by year, from XXX tonnes in XXX to XXX tonnes in 2016, with a CAGR of XXX % in 2012–2016, higher than that of the total herbicides consumption during the same period. In China, glufosinate-ammonium is quite important for the weeds control and prevention in orchards, vegetable fields, wasteland reclamation and traditional crop fields.

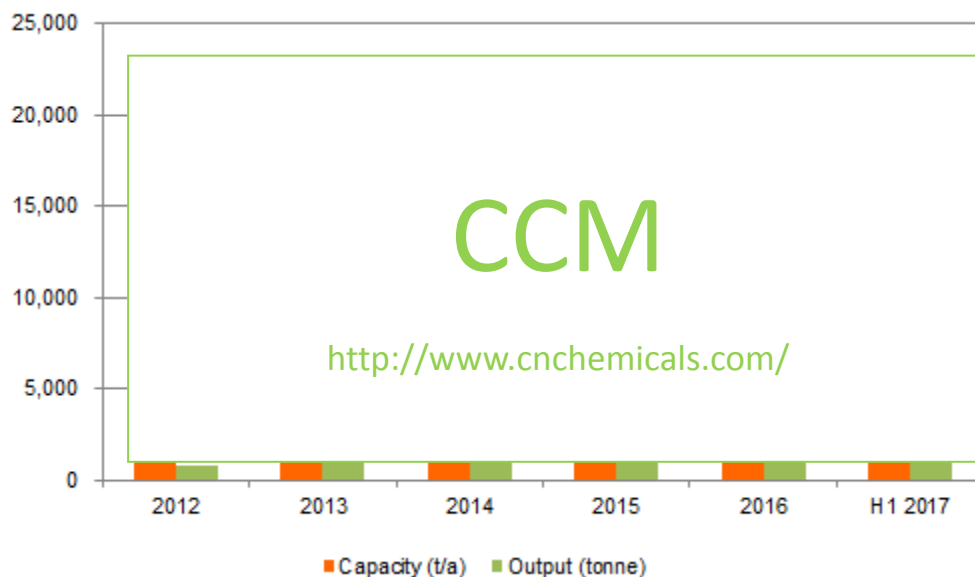
#### 4. What's in this report?

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

### 1 Production

#### 1.1 Production of glufosinate-ammonium technical in China, 2012–H1 2017

Figure 1.1-1 Capacity and output of glufosinate-ammonium technical in China, 2012–H1 2017



*Note: There are two specifications of glufosinate-ammonium technical produced in China, 95% TC and 50% TK. The technical output here is the total output of both specifications converted to 95% TC. The actual output volume of 50% TK is converted into that of 95% TC here. The calculation formula is as follows: the output volume of 50% TK converted in 95% TC = the actual output volume of 50% TK \* 0.5 / 0.95.*

Source: CCM

China's glufosinate-ammonium technical production has maintained its spectacular growth in 2012–2016, compared with that in 2007–2011. Soaring overseas demand and technology improvement are the two most important factors contributing to this dramatic increase in 2012–



2016.

Driven by robust and fast-growing overseas demand and insufficient supply in 2012–2016, China's capacity of glufosinate-ammonium technical increased rapidly from XXX t/a in 2012 to XXX t/a in 2016, with a CAGR of XXX %; and the output of it rose from 760 tonnes in 2012 to XXX tonnes in 2016, with a CAGR of XXX % during the same period.

The low operating rate of glufosinate-ammonium technical ranging from XXX % to XXX % in 2012–2016 is attributed to the capacity expansions of leading producers and newly added capacities.

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## 2 Producer

### 2.1 Producers of glufosinate-ammonium technical in China, 2012–H1 2017

Table 2.1-1 Capacity and output of glufosinate-ammonium technical producers in China, 2012–H1 2017

No.	Producer	Status, H1 2017	Capacity (t/a)						Output (tonne)					
			2012	2013	2014	2015	2016	H1 2017	2012	2013	2014	2015	2016	H1 2017
1	Yongnong BioSciences	Active	800	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	Active	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	500	500	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5	Jiangsu Sevencontinent	Active	/	XXX	XXX	XXX	XXX	XXX	/	XXX	XXX	XXX	XXX	XXX
6	XXX	XXX	1,000	1,000	XXX	XXX	XXX	XXX	0	0	XXX	XXX	XXX	XXX
7	Inner Mongolia Jiaruimi	Active	/	/	/	XXX	XXX	XXX	/	/	/	XXX	XXX	XXX
8	Rosi Chemical	Active	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
9	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
10	Weifang Rainbow	Stopped	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
11	XXX	Idle	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Others			XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
<b>Total</b>			XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

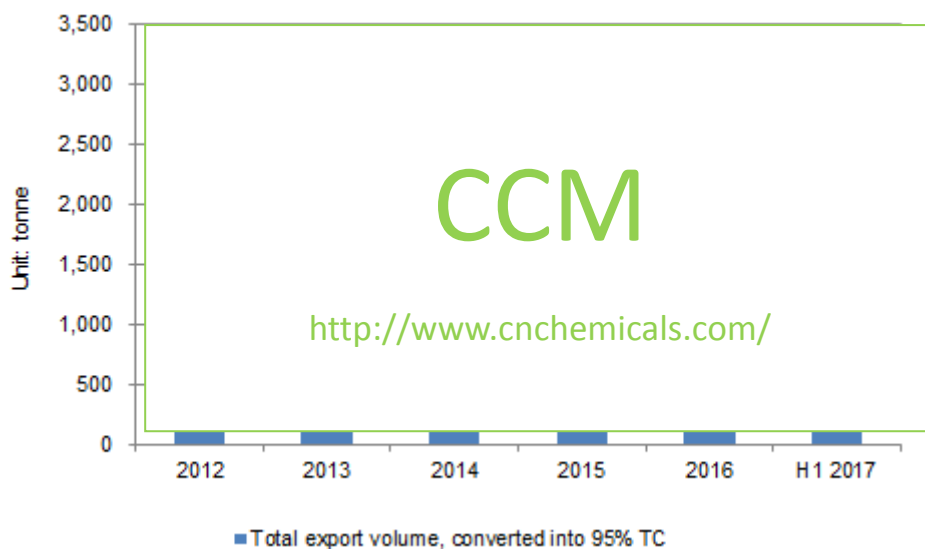
Source: CCM

As of H1 2017, there have been xxx glufosinate-ammonium technical producers in China. Among them, xxx have been active as of June 2017, and the rest xxx either has stopped or has suspended production since 2016, the year when they launched production.

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## 4 Export

Figure 4-1 China's export volume of glufosinate-ammonium, 2012–H1 2017



Note: 1) The export volume in this figure is all the specifications' export volume converted to 95% TC, including both technical and formulations of glufosinate-ammonium.

2) The export volume of the specification converted in 95% TC = the actual export volume of the specification

\* its content rate of active ingredient of glufosinate-ammonium / 0.95

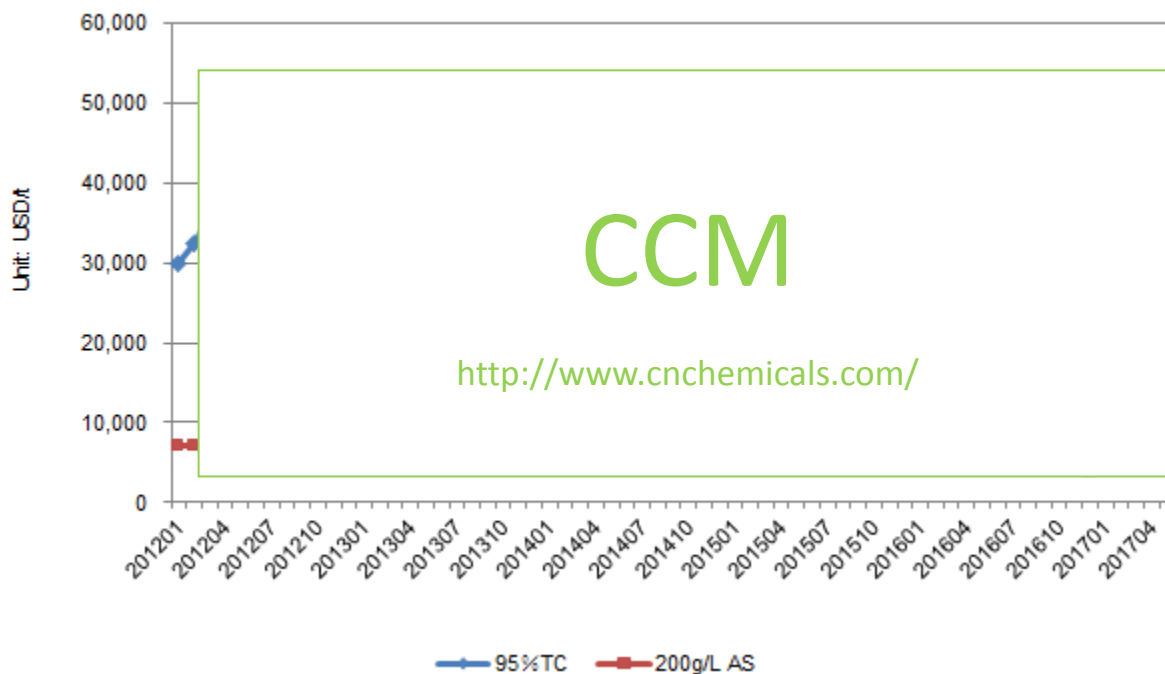
Source: China Customs & CCM

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## 5 Price

Figure 5-1 Monthly export prices of glufosinate-ammonium 95% technical and glufosinate-ammonium 200g/L AS in China, Jan. 2012–June 2017



Note: 1. The price in total is weighted average price.

2. These data are obtained by CCM's analysis on 8 digit HS code of China Customs data. The Customs data consist of many shipments, and the prices can be FOB prices, C&F prices or CIF prices. However, it is very hard to distinguish which shipment is FOB price, C&F price or CIF price as there is no precise explanation in 8 digit HS code Customs data. So the price in above table are weighted average prices of FOB prices, CIF prices and C&F prices, and the relevant weight is the export volume of each shipment. Here is the calculation formula: Weighted average prices =  $(\text{export volume}_1 \times \text{price}_1 + \text{export volume}_2 \times \text{price}_2 + \dots + \text{export volume}_n \times \text{price}_n) / (\text{export volume}_1 + \text{export volume}_2 + \dots + \text{export volume}_n)$ .

3. 95% TC is the dominant specification of glufosinate-ammonium technical produced and exported in China, while 200g/L AS is the dominant specification of Chinese glufosinate-ammonium formulations.

Source: China Customs and CCM

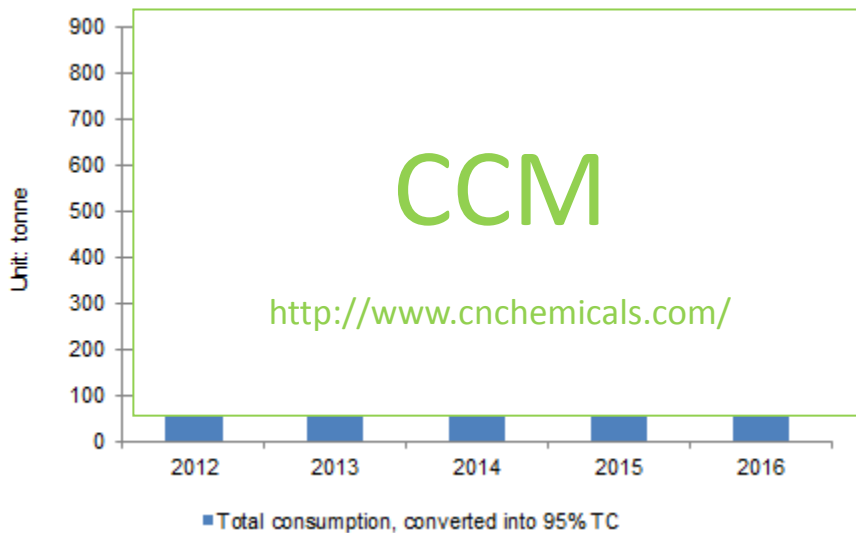
The export price of China's glufosinate-ammonium, especially its technical, kept growing slightly because of supply shortage in 2012–2014. However, the price presented a downward trend in general since 2015, thanks to Chinese producers' continuous capacity expansion and production cost reduction because of their technology improvements in recent years.

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## 6 Domestic consumption

Glufosinate-ammonium is a non-selective herbicide and its quick effectiveness is between paraquat's and glyphosate's. It is commonly used in orchards, vineyards, potato fields, non-crop land for control of annual and perennial dicotyledonous weeds and gramineous weeds.

Figure 6-1 Consumption of glufosinate-ammonium in China, 2012–2016



Note: 1) The consumption in this figure is all the specifications' consumption converted to 95% TC, including both technical and formulations of glufosinate-ammonium.

2) The consumption of the specification converted in 95% TC = the actual consumption of the specification \* its content rate of active ingredient of glufosinate-ammonium / 0.95.

3) The resulting consumption is rounded up.

Source: CCM

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