CCM Data & Business Intelligence

Production and Market of Glufosinate-ammonium in China

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Researched & Prepared by:

Kcomber Inc.

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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 glufosinate-ammonium technical and formulations in China.
Region scope: China
Time scope: 2013–2019, except export chapter with time scope of 2013–Oct. 2019 and domestic consumption chapter with time scope of 2013–2018.

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 include 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 production of glufosinate-ammonium has maintained a spectacular growth in XXX. XXX and XXX are the two most important factors contributing to the dramatic increase. However, the growth slowed down in XXX. XXX might be the main reason.

China's capacity of glufosinate-ammonium TC increased from XXX t/a in 2013 to XXX t/a in 2019, with a CAGR of XXX; and the output rose from XXX tonnes in 2013 to XXX tonnes in 2019, with a CAGR of XXX during the same period. The operating rate of glufosinate-ammonium TC in China was between XXX and XXX for the top producers in 2019, whereas it was below XXX for smaller ones. Glufosinate-ammonium TC production has become more concentrated on top producers.

As of Dec. 2019, there were XXX active registrations of glufosinate-ammonium TC and XXX active registrations of glufosinate-ammonium TK in China. However, there were only XXX glufosinate-ammonium TC producers in 2019, among which XXX were active.

As of December 2018, there are XXX active registrations of glufosinate-ammonium TC and XXX active registrations of glufosinate-ammonium TK in China. Nevertheless, there were only XXX glufosinate-ammonium TC producers in 2017. Among them, XXX was active, and the other XXX didn't produce glufosinate-ammonium TC in 2017.

The registrations of glufosinate-ammonium formulations in China increased sharply. There were XXX registrations by XXX companies as of June 2017, and there have been XXX registrations by XXX companies as of December 2018. XXX AS is the key specification with XXX registrations as of December 2018. In spite of a large increase in the number of registrations, there are just a few producers of glufosinate-ammonium formulations in China. Only XXX producers had an annual output of over XXX tonnes in 2017.

There are two main routes for the industrial production of glufosinate-ammonium TC, namely Hoechst route and Strecker route. Hoechst route, which is mastered by Bayer CropScience AG only, is of little pollution and low cost. Chinese producers mainly take Strecker route. With years of efforts, Chinese producers have improved the production technology, achieving lower production cost and better quality.

XXX claims that it has mastered the Hoechst route and decreased the production cost significantly. It has planned to increase glufosinate-ammonium TC capacity.

China's export of glufosinate-ammonium has witnessed considerable increases, surging from XXX tonnes in 2013 to XXX tonnes in 2018, thanks to robust demand from overseas market. China's export volume of glufosinate-ammonium technical, on average, accounted for XXX of China's total export of glufosinate-ammonium in 2013–2017. The ratio increased to over XXX in 2018 and 2019. The export destinations of China's glufosinate-ammonium also have been expanding, from XXX in 2013 to XXX in 2018.

The export price of China's glufosinate-ammonium had a fast growth during 2013–2014. Due to capacity expansion, and production cost reduction through technology improvements, the price decreased greatly in 2015 and early 2016. After July 2016, greater demand yet lesser output pushed the price up. Since March 2017, the price was XXX, but from early 2018 on, the price XXX.

In China, glufosinate-ammonium is quite important for the weeds control and prevention in orchards, vegetable fields, wasteland reclamation and traditional crop fields. Domestic consumption of glufosinate-ammonium increased year by year, from XXX tonnes in 2013 to XXX tonnes in 2018, with a CAGR of XXX in this period, XXX than that of the domestic herbicide consumption in the same period.

In the future, driven by the expanding scale of paraquat prohibition at home and abroad, the development of glufosinate-ammonium and glyphosate compound pesticides, as well as increasing cultivation of glufosinate-ammonium tolerant crops, stacked glyphosate/glufosinate traits crops, and

stacked glufosinate/dicamba traits crops, the market demand for glufosinate-ammonium is expected to remain robust.

The prospect for China's glufosinate-ammonium production will be decided by three major factors: XXX, XXX and XXX.

Considering the relationship between supply and demand mentioned above, it is expected that the ex-works price of glufosinate-ammonium will XXX in the near future.

4. What's in this report?

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

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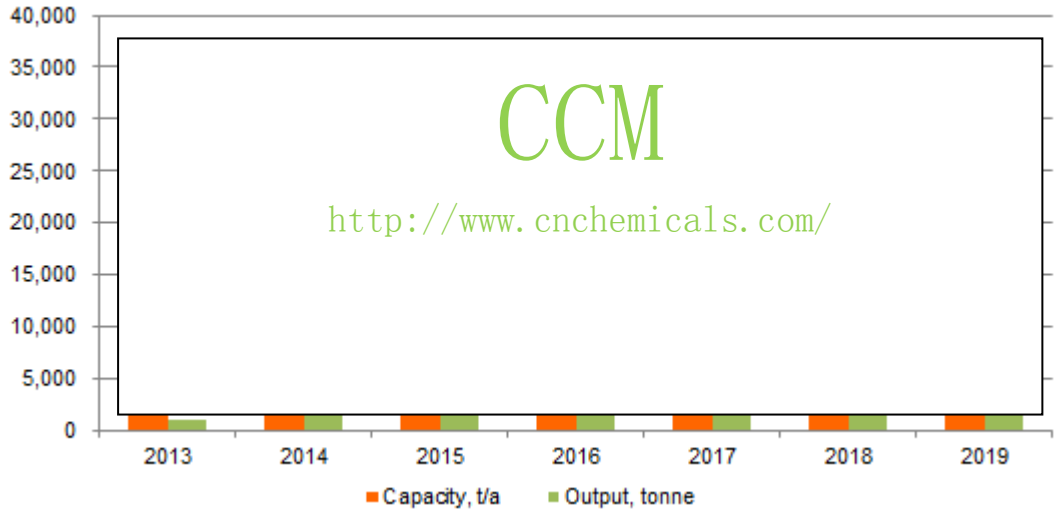
1 Production

1.1 Production of glufosinate-ammonium technical in China, 2013–2019

Figure 1.1-1 Capacity and output of glufosinate-ammonium technical in China, 2013–2019



*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

2 Producer

2.1 Producers of glufosinate-ammonium technical in China, 2013–2019

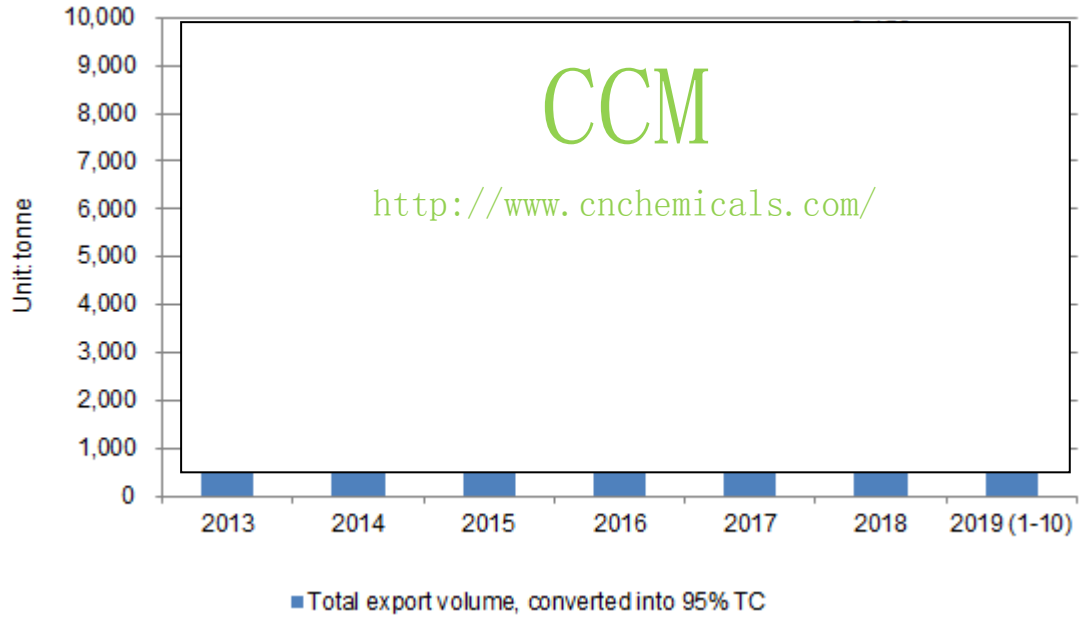
Table 2.1-1 Capacity and output of glufosinate-ammonium technical producers in China, 2013–2019

No.	Producer	Capacity, t/a							Output, tonne						
		2013	2014	2015	2016	2017	2018	2019	2013	2014	2015	2016	2017	2018	2019
1	Lier Chemical	600	600	XXX	XXX	XXX	XXX	XXX	200	300	XXX	XXX	XXX	XXX	XXX
2	Yongnong BioSciences	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	Hebei Veyong	500	500	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
…	…	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: CCM

4 Export

Figure 4-1 China's export of glufosinate-ammonium, 2013–Oct. 2019

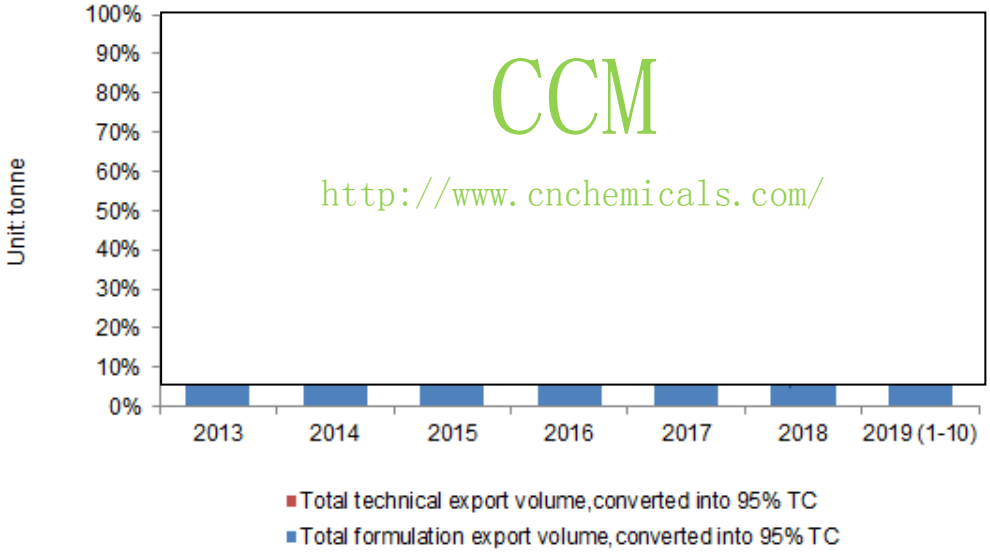


Note: 1) The export volume here means the volume converted to 95% TC of all specifications, including both technical and formulations of glufosinate-ammonium.

*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: CCM & China Customs

Figure 4-4 China's export volume of glufosinate-ammonium technical and formulation, 2013–Oct. 2019



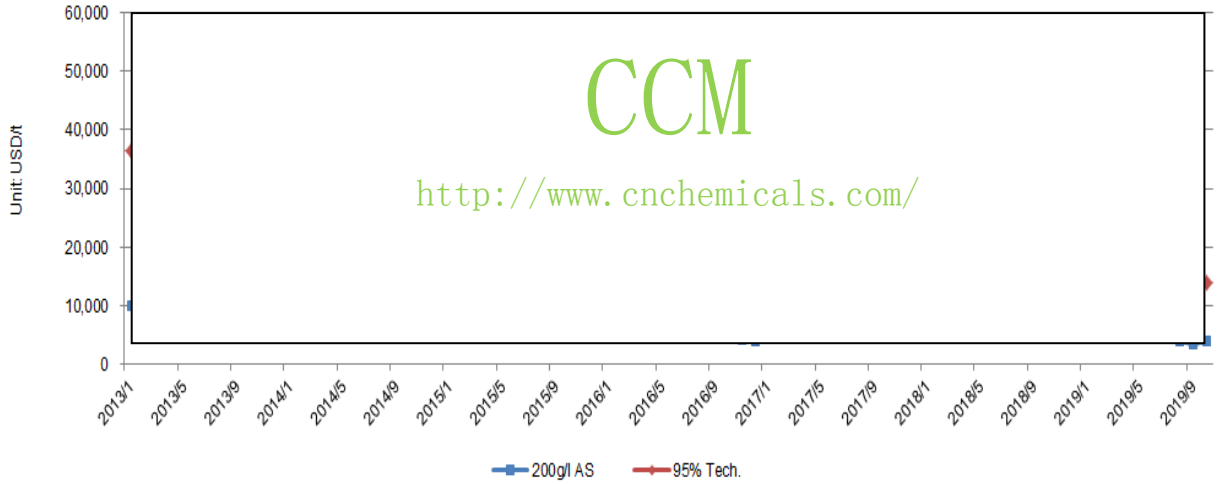
Note: 1) The export volume here means the volume converted to 95% TC of all specifications, including both technical and formulations of glufosinate-ammonium.

*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

5 Price

Figure 5-1 Monthly export prices of 95% glufosinate-ammonium technical and glufosinate-ammonium 200g/L AS in China, Jan. 2013–Oct. 2019



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

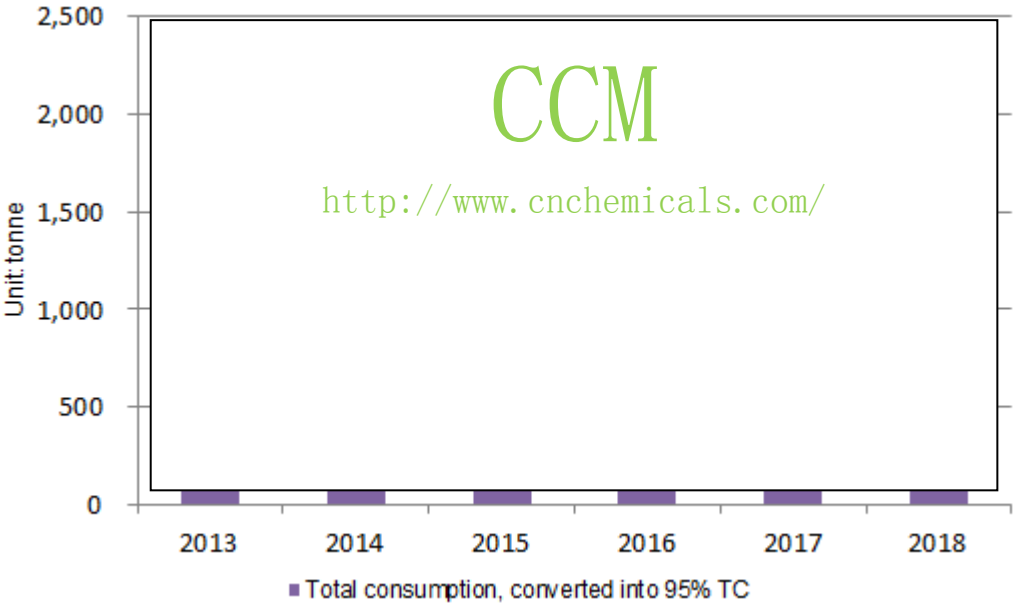
2. These data are obtained by CCM's analysis on 8 digit HS code of China Customs data. The Customs data consist of many shipments, and the prices can be FOB prices, C&F prices or CIF prices. However, it is very hard to distinguish which shipment is FOB price, C&F price or CIF price as there is no precise explanation in 8 digit HS code Customs data. So the prices in above figure 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 = (export volume1×price1 + export volume 2×price2+…+ export volume n× price n) / (export volume1+export volume2+...+ 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 & CCM

6 Domestic consumption

Figure 6-1 Consumption of glufosinate-ammonium in China, 2013–2018



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

Table 6-2 Application parameters of glufosinate-ammonium in main target crops in China, 2018

Crop	Annual application frequency	Usage, g(AI)/ha	Rate per application
Orchard	XXX	XXX	XXX
Vegetables	XXX	XXX	XXX
Corn	XXX	XXX	XXX
Wheat	XXX	XXX	XXX
Tea	XXX	XXX	XXX
Rubber	XXX	XXX	XXX
Cotton	XXX	XXX	XXX
Sugarcane	XXX	XXX	XXX

Source: CCM

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If you want more information, please feel free to contact us
Tel: +86-20-37616606 Fax: +86-20-37616968
Email:econtact@cnchemicals.com