

# Production Situation of Glufosinate-ammonium in China 2023

The Ninth Edition

March 2024

**Researched & Prepared by:**

**Kcomber Inc.**

**Copyright by Kcomber Inc.**

**Any publication, distribution or copying of the content in this report is prohibited.**

# Contents

|  |    |
|--|----|
| <b>Executive summary</b> .....   | 1  |
| <b>Introduction and methodology</b> .....                                    | 3  |
| <b>1 Production</b> .....  | 5  |
| 1.1 Production of glufosinate-ammonium technical in China, 2019–2023.....    | 5  |
| 1.2 Production of glufosinate-ammonium formulations in China, 2019–2023..... | 5  |
| <b>2 Producer</b> .....  | 7  |
| 2.1 Producers of glufosinate-ammonium technical in China, 2019–2023.....     | 7  |
| 2.2 Producers of glufosinate-ammonium formulations in China, 2019–2023.....  | 10 |
| <b>3 Production technology</b> .....   | 12 |
| <b>4 Export</b> .....  | 14 |
| 4.1 Export of glufosinate-ammonium technical in China, 2019–2023.....        | 17 |
| 4.2 Export of glufosinate-ammonium formulations in China, 2019–2023.....     | 19 |
| <b>5 Price</b> .....   | 23 |
| <b>6 Domestic consumption</b> .....  | 25 |
| <b>7 Conclusions</b> .....   | 29 |

## LIST OF TABLES

|  |
|--|
| Table 2-1 Producers of glufosinate-ammonium TC in China, 2019–2023                                 |
| Table 2.1-1 Capacity and output of glufosinate-ammonium technical producers in China, 2019–2023    |
| Table 2.2-1 Output of glufosinate-ammonium formulations producers in China, 2019–2023              |
| Table 4.1-1 Export volume of glufosinate-ammonium technical in China by month, 2022–2023, tonne    |
| Table 4.2-1 Export volume of glufosinate-ammonium formulations in China by month, 2022–2023, tonne |
| Table 6-1 Planting areas of glufosinate-ammonium's main target crops in China, 2019–2023, '000 ha  |
| Table 6-2 Application parameters of glufosinate-ammonium in main target crops in China, 2023       |

## LIST OF FIGURES

|   |
|---|
| Figure 1.1-1 Capacity and output of glufosinate-ammonium technical in China, 2019–2023                              |
| Figure 1.2-1 Output of glufosinate-ammonium formulations in China, 2019–2023  |
| Figure 3-1 Flowchart of glufosinate-ammonium technical production in China  |
| Figure 4-1 China's export volume of glufosinate-ammonium, 2019–2023   |
| Figure 4-2 China's export volume of glufosinate-ammonium technical and formulation, 2019–2023                       |
| Figure 4-3 Export destinations of China's glufosinate-ammonium by volume and share, 2019–2023, tonne                |
| Figure 4-4 Export destinations of China's glufosinate-ammonium by volume and share, 2023, tonne                     |
| Figure 4.1-1 Export volume of glufosinate-ammonium technical in China by quarter, 2020–2023                         |
| Figure 4.1-2 Export destinations of China's glufosinate-ammonium technical by volume and share, 2019–2023, tonne    |
| Figure 4.1-3 Export destinations of China's glufosinate-ammonium technical by volume and share, 2023, tonne         |
| Figure 4.2-1 Export volume of glufosinate-ammonium formulations in China by month, 2020–2023                        |
| Figure 4.2-2 Export destinations of China's glufosinate-ammonium formulations by volume and share, 2019–2023, tonne |

Figure 4.2-3 Export destinations of China's glufosinate-ammonium formulations by volume and share, 2023, tonne

Figure 5-1 Monthly ex-works prices of 95% glufosinate-ammonium technical in China, 2019–2023

Figure 6-1 Consumption of glufosinate-ammonium in China, 2019–2023, tonne

Figure 6-2 Consumption pattern of China's glufosinate-ammonium by main target crops, 2023, tonne



## 1. Introduction

## 2. Approach for this report

The report is formulated by methods as follows:

### X. 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.

### X. 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:

- 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.

### Unit

RMB: currency unit in China, also called Yuan

USD: currency unit in the United States

Tonne: ton, equaling to metric ton in this report

t/a: tonne/annual or tonne/year

/t: per tonne

ha: hectare

### **Glossary**

TC: Technical material

TK: Technical concentrate

AS: Aqueous solution

SL: Soluble concentrate

SG: Water soluble granule

MDP: Methylphosphonous dichloride

AI: Active ingredient

*Source: The People's Bank of China*

### 3. Executive summary

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

Since the outbreak of the COVID-XX pandemic in early XXXX, the ex-works price of Chinese glufosinate-ammonium has kept increasing. In HX XXXX, the overseas demand for China's glufosinate-ammonium grew, but the inventory was insufficient, which worsened due to limited production capacity of manufacturers and abnormal production of its raw material diethyl phosphite. According to CCM price monitoring data, the ex-works price of XX% TC stood high in Nov. XXXX at USDXX,XXX/t, up by XXX% compared with that in Nov. XXXX, driven by tight supply and rising costs of raw materials. Thanks to completion and operation of new capacities in China, the ex-works price started to go down in Dec. XXXX and dipped to USDXX,XXX/t in April XXXX, down XX% from the peak in Nov. XXXX. However, the price recovered as a result of the sustained increase in the price of yellow phosphorus from April to June. From July to Dec., with the pesticide market gradually entering off-season and the continued release of production capacity, the ex-works price of glufosinate-ammonium continued to fall to USDXX,XXX/t in Dec. XXXX. In Jan.–Oct. XXXX, glufosinate-ammonium witnessed an overall decline in quotation, with its price in Oct. slumping by XX.X% compared with that in Dec. XXXX, and the relatively high inventory overseas and sluggish demand caused by production capacity expansion were attributable to the price drop. The product's price went up within the peak storage season from Nov. to Dec., driven by manufacturers' insistent demands for higher price, in spite of the fact that the downstream demand for the product did not grow significantly amid dull market.

Regarding production, from XXXX to XXXX, the capacity of glufosinate-ammonium TC in China showed a fast growth from XX,XXX t/a to XX,XXX t/a, with a CAGR of XX.X%. And the output rose from XX,XXX tonnes to XX,XXX tonnes in XXXX–XXXX, at a CAGR of XX.X%, mainly driven by soaring demand at home and abroad and technology improvement. As of Dec. XXXX, there were XX active registrations of glufosinate-ammonium TC and XX active registrations of glufosinate-ammonium TK in China, only part of which have production lines approved and operated.

In consumption of glufosinate-ammonium, overseas consumption currently plays an important part in China's glufosinate-ammonium. The export volume of glufosinate-ammonium (converted to XXX% AI) in China saw continuous growth for years. However, a drop appeared as China and the world suffered from COVID-XX in early XXXX. Due to China's effective measures against the epidemic and the robust overseas demand, the XXXX export volume recovered from X,XXX tonnes in XXXX to XX,XXX tonnes, up XXX.X%

YoY. On the other hand, its high price made the domestic consumption in China not much compared with export. In XXXX, as the impact of the COVID-XX epidemic diminished, glufosinate-ammonium producers gradually recovered their production capacity and global demand for glufosinate-ammonium continued to grow, with exports surging to XX,XXX tonnes, up XXX.X% YoY. However, the export volume dropped by XX.X% YoY to XX,XXX tonnes in XXXX, due to high inventory and decreasing demand overseas in the first half of the year. In XXXX–XXXX, consumption of glufosinate-ammonium in China increased from X,XXX tonnes to X,XXX tonnes, with a CAGR of XX.X%.



## 4. What is in the report?

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

...

# 1 Production

Glufosinate-ammonium technicals produced in China include XX% technical (TC), XX% TC, XX% TC, XX% TC and XX% technical concentrate (TK), of which XX% TC is the main specification. And glufosinate-ammonium formulations include XXX g/L AS, XXX g/L AS, XXX g/L AS, XXX g/L AS, XX% AS, XXX g/L SL, XXX g/L SL, XXX g/L SL, XXX g/L SL, XX% SG and XX% SG, with XXX g/L AS as the dominant formulation.

## 1.1 Production of glufosinate-ammonium technical in China, 2019–2023

...

From XXXX to XXXX, the capacity of glufosinate-ammonium TC in China showed a fast growth from XX,XXX t/a to XX,XXX t/a, with a CAGR of XX.X%. And the output rose from XX,XXX tonnes to XX,XXX tonnes in XXXX–XXXX, at a CAGR of XX.X%, mainly driven by soaring demand at home and abroad and technology improvement. Meanwhile, domestic glufosinate-ammonium TC saw lower production costs and higher quality, making China's manufacturers increasingly competitive in the global market.

...

## 2.2 Producers of glufosinate-ammonium formulations in China, 2019–2023

Table 2.2-1 Output of glufosinate-ammonium formulations producers in China, 2019–2023

| No. | Producer             | Output, tonne |        |        |        |        |
|-----|----------------------|---------------|--------|--------|--------|--------|
|     |                      | 2019          | 2020   | 2021   | 2022   | 2023   |
| X   | XXXXXXXXXXXXXXXXXXXX | XXXXX         | XXXXX  | XXXXXX | XXXXXX | XXXXXX |
| X   | XXXXXXXXXXXXXXXXXXXX | XXXXX         | XXXXX  | XXXXX  | XXXXX  | XXXXX  |
| X   | XXXX XXXXXXXX        | XXXXX         | XXXXX  | XXXXX  | XXXXX  | XXXXX  |
| X   | XXXXX XXXXXXX        | XXXXX         | XXXXX  | XXXXX  | XXXXX  | XXXXX  |
| X   | XXXXXXXXXXXXXXXX     | XXXXX         | XXXXX  | XXXXX  | XXXXX  | XXXXX  |
| X   | XXXXXXXXXXXXXXXX     | XXX           | XXX    | XXX    | XXX    | XXX    |
| X   | XXXXXX               | XXXXX         | XXXXX  | XXXXX  | XXXXX  | XXXXX  |
|     | XXXXX                | XXXXXX        | XXXXXX | XXXXXX | XXXXXX | XXXXXX |

Note:1. Output here refers to the total amount of glufosinate-ammonium formulations including 100 g/L AS, 150 g/L AS, 180 g/L AS, 200 g/L AS, 50% AS, 150 g/L SL, 180 g/L SL, 200 g/L SL, 280 g/L SL, 80% SG and 88% SG.

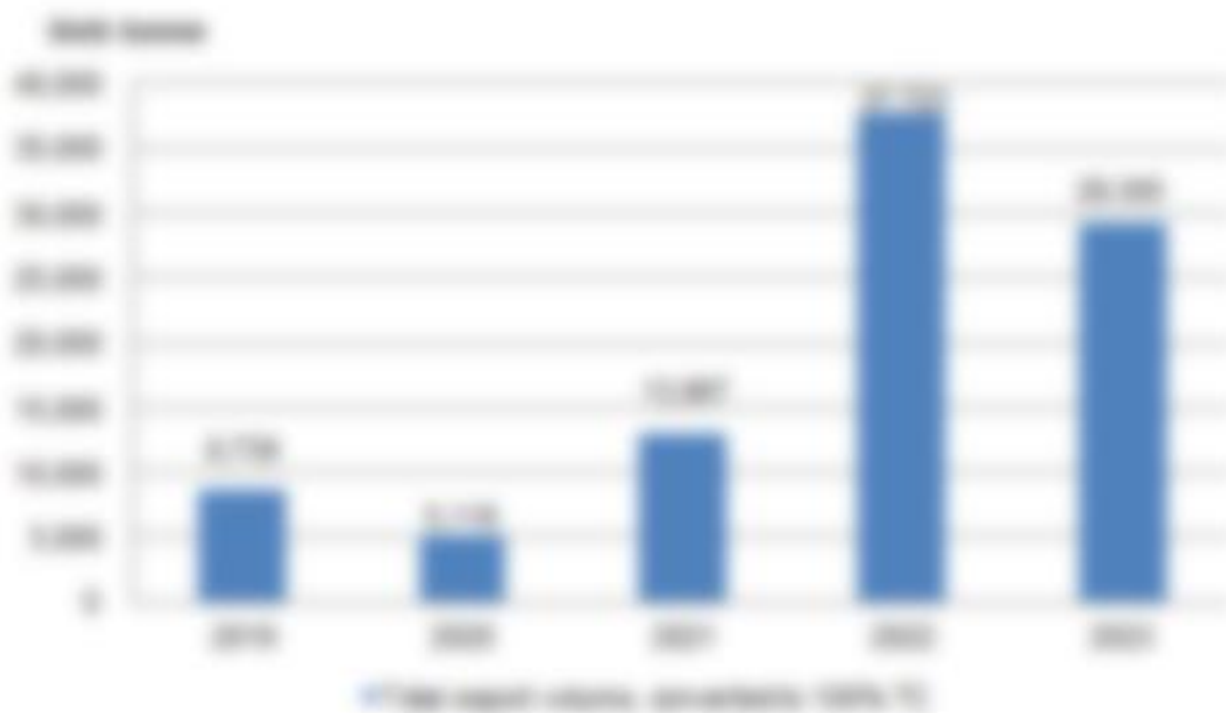
2. The output data of Bayer CropScience (China) Co., Ltd., which did not disclose its glufosinate-ammonium formulation output, is excluded.

Source:CCM

...

## 4 Export

Figure 4-1 China's export volume of glufosinate-ammonium, 2019–2023



Note:1. After April 2020, data of exports are incomplete mainly caused by the changed sources. As export data are continuously updated and refined, data prior to 2023 may be different from that in the previous issues.

2. All the volumes are calculated by 100% technical.

Source:Tranalysis

The export volume of glufosinate-ammonium (converted to XXX% AI) in China saw continuous growth for years. However, a drop appeared as China and the world suffered from the outbreak of the COVID-XX epidemic in early XXXX. Due to China's effective measures against the epidemic and the robust overseas demand, the XXXX export volume recovered, surging from X,XXX tonnes in XXXX to XX,XXX tonnes, up XXX.X% YoY. In XXXX, as the impact of the epidemic waned, global demand for glufosinate-ammonium continued to gain momentum and glufosinate-ammonium producers gradually recovered and increased their production, with exports surging to XX,XXX tonnes, up XXX.X% YoY. In XXXX, the export volume fell by XX.X% YoY to XX,XXX tonnes, due to high inventory and decreasing demand overseas in the first half of the year.

Although glyphosate and paraquat remain the top two popular herbicides widely-used in the global market, the growing resistance to them coupled with the rising concerns over the carcinogenicity of glyphosate and the expanding bans on paraquat in more countries, give glufosinate-ammonium great opportunities to take up more market shares. The growing resistance of some weeds to glyphosate has led to the development of other herbicide-resistant transgenic crops. In recent years, the seeds of glufosinate-ammonium resistant transgenic crops have been approved worldwide. At present, glufosinate-ammonium resistant genes have been introduced into more than XX crops such as rape, corn, cotton, wheat, and sugarcane.

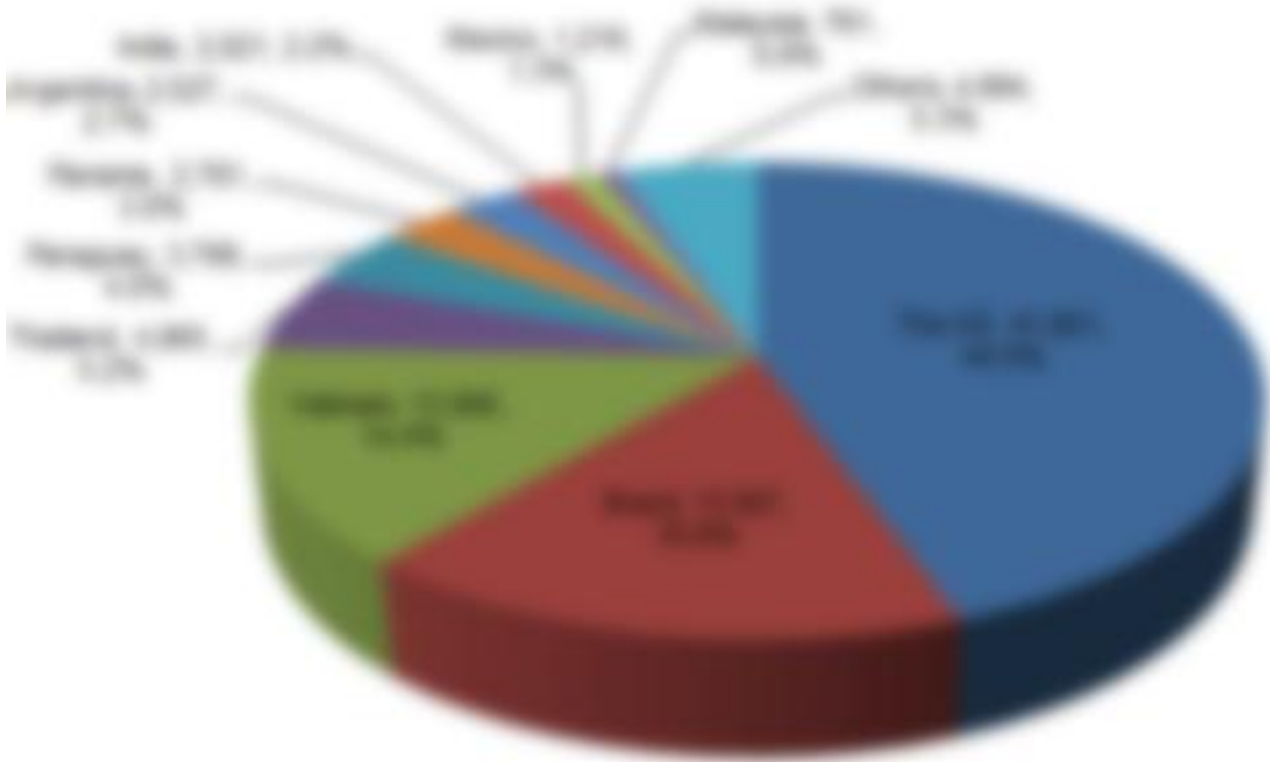
In addition, in XXXX paraquat has been banned in Thailand from June and in Brazil from Sept. California state in the US also considered banning paraquat and glyphosate in the future against their poisoning effects. Once banned, paraquat on the market will be replaced by the remaining herbicides, and glufosinate-ammonium is regarded as one of the best substitutes. Therefore, overseas demand for glufosinate-ammonium will further increase.

...

China exports both glufosinate-ammonium technical and formulation products. During XXXX–XXXX, export volume of technical products has on average accounted for XX.X% of China's glufosinate-ammonium export. In XXXX, export volume of glufosinate-ammonium technical and formulation witnessed significant growth to reach XX,XXX tonnes, with the technical accounting for XX.X% and formulation for XX.X%. In XXXX, the technical export volume dropped slightly, accounting for XX.X% of the total and leaving XX.X% for formulation.

In XXXX, producers have been more concentrated on XX% TC and XXX g/L AS production, which were the dominant specifications of glufosinate-ammonium products exported from China.

Figure 4-2 Export destinations of China's glufosinate-ammonium by volume and share, 2019–2023, tonne



Note:1. Due to rounding-off, the total export volume of China's glufosinate-ammonium by volume and share is not equal to the total of export volume of glufosinate-ammonium showed in Figure 4-1.  
 2. All the volumes are calculated by 100% technical.  
 Source:Tranalysis

...

#### 4.1 Export of glufosinate-ammonium technical in China, 2019–2023

Table 4.1-1 Export volume of glufosinate-ammonium technical in China by month, 2022–2023, tonne

| Month | 2022       | 2023       | YoY change |
|-------|------------|------------|------------|
| XXXX  | XXXXXXXX   | XXXXXXXXXX | XXXXXXXX   |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXX     |
| XXXXX | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXXX | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXX   | XXXXXXX    | XXXXXXXXXX | XXXXXX     |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXX     |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXXX | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXX  | XXXXXXXXXX | XXXXXXXXXX | XXXXXXXX   |
| XXXX  | XXXXXXXXXX | XXXXXXX    | XXXXXXXX   |
| XXXXX | XXXXXXXXXX | XXXXXXXXXX | XXXXXXX    |

Note:1. Export volume here refers to the total amount of five specifications, including 95% TC, 96% TC, 97% TC, 98% TC and 50% TK. All the volumes are calculated by 100% technical.

2. Since May 2020, China's export data are sourced from the customs of various destinations. As export data are continuously updated and refined, data in 2022 may be different from that in the previous issue.

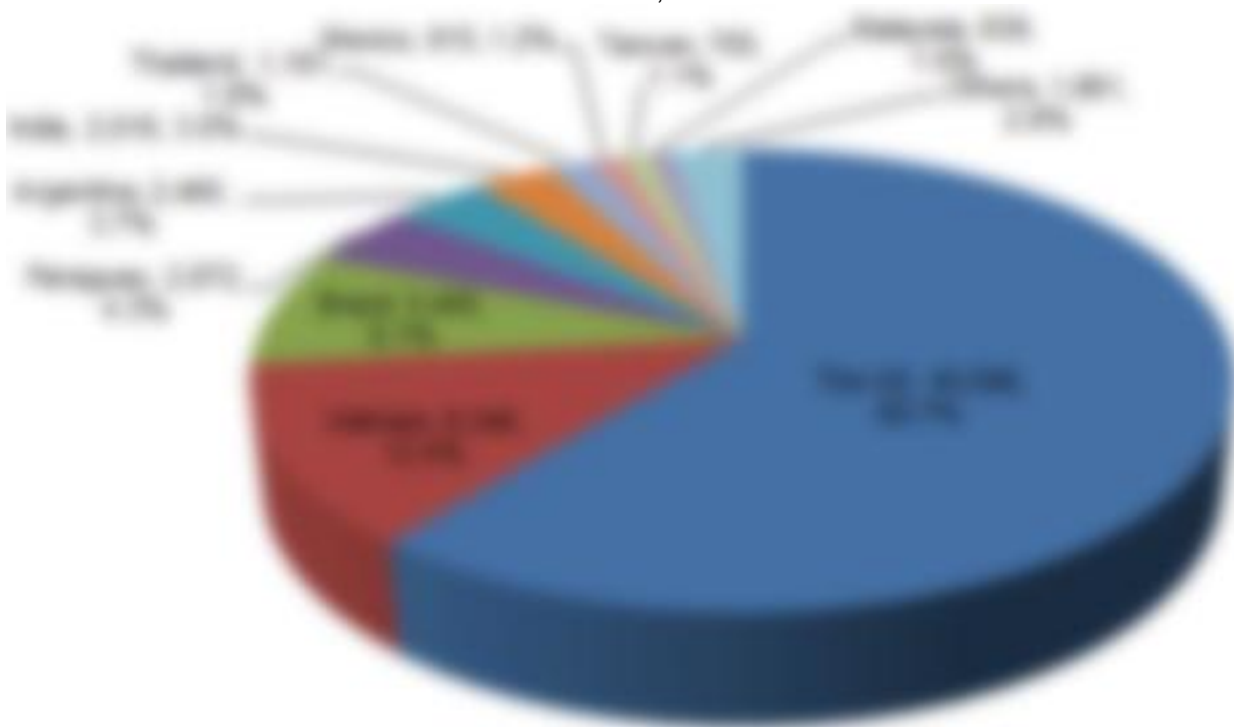
Source:Tranalysis

Figure 4.1-1 Export volume of glufosinate-ammonium technical in China by quarter, 2020–2023



Note:1. Export volume here refers to the total amount of five specifications, including 95% TC, 96% TC, 97% TC, 98% TC and 50% TK.  
 2. Since May 2020, China's export data are sourced from data of the customs of various destinations. As export data are continuously updated and refined, data prior to 2023 may be different from that in the previous issues.  
 3. All the volumes are calculated by 100% technical.  
 Source:Tranalysis

Figure 4.1-2 Export destinations of China's glufosinate-ammonium technical by volume and share, 2019–2023, tonne

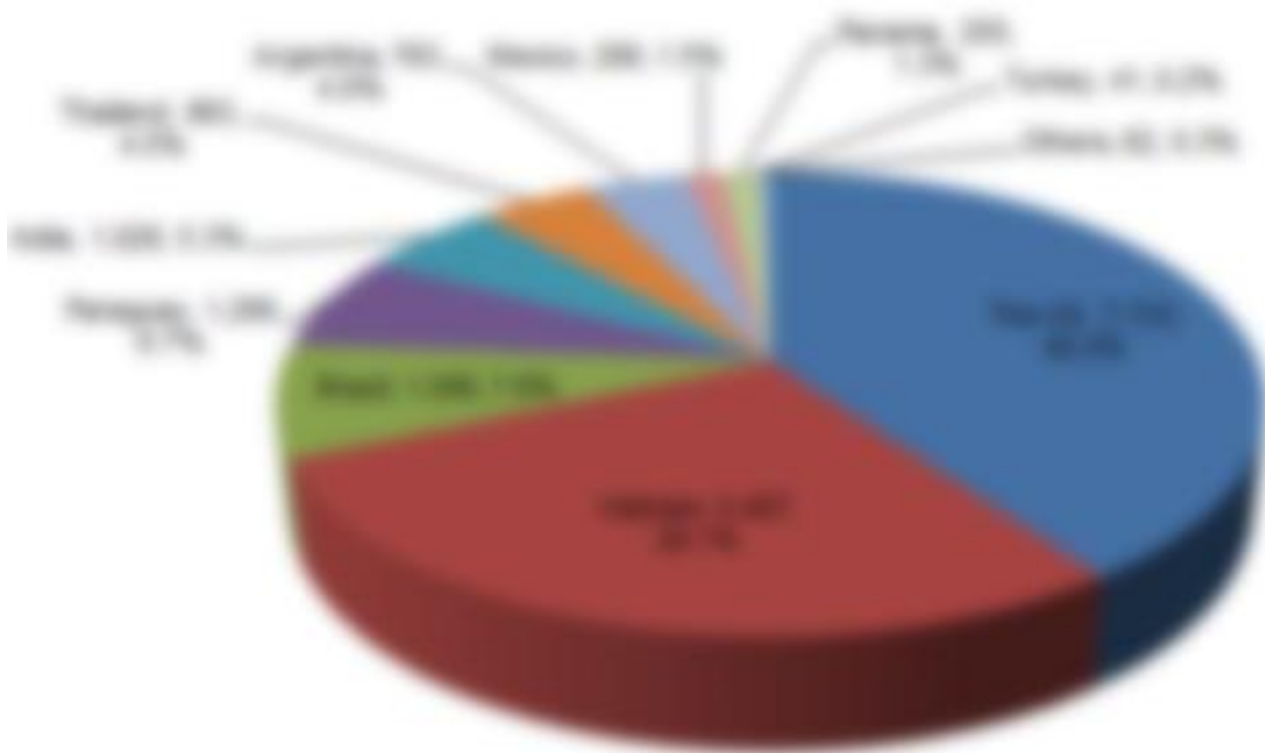


Note:1. There are five specifications of glufosinate-ammonium technical produced in China, i.e. 95% TC, 96% TC, 97% TC, 98% TC and 50% TK.

2. All the volumes are calculated by 100% technical.

Source:Tranalysis

Figure 4.1-3 Export destinations of China's glufosinate-ammonium technical by volume and share, 2023, tonne



Note:1. There are five specifications of glufosinate-ammonium technical produced in China, i.e. 95% TC, 96% TC, 97% TC, 98% TC and 50% TK.

2. All the volumes are calculated by 100% technical.

Source:Tranalysis

...

## 4.2 Export of glufosinate-ammonium formulations in China, 2019–2023

...

Brazil, Vietnam, Thailand, the US and Paraguay were the top five export destinations in XXXX, accounting for XX.X% of the total volume of exported glufosinate-ammonium formulations.

## 5 Price

Figure 5-1 Monthly ex-works prices of 95% glufosinate-ammonium technical in China, 2019–2023



Source:CCM

...

## 6 Domestic consumption

...



Table 6-1 Planting areas of glufosinate-ammonium's main target crops in China, 2019–2023, '000 ha

| Crop                  | 2019     | 2020     | 2021     | 2022     | 2023     |
|-----------------------|----------|----------|----------|----------|----------|
| XXXXXXXX              | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXXXXXXXXXX          | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXX                  | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXXX                 | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXX                   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXXXX                | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXXXX                | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXXXXXXXXXX          | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   | XXXXXX   |
| XXXXX XXXXXXXXXX XXXX | XXXXXXXX | XXXXXXXX | XXXXXXXX | XXXXXXXX | XXXXXXXX |

Source: National Bureau of Statistics of China & CCM

...

## 7 Conclusions

In XXXX–XXXX, China's glufosinate-ammonium production has been in a fast expansion period, with significant growth in capacity and output. However, the export volume saw fluctuations during this period, with growth slowing down in XXXX and even a large drop in XXXX. Since the US is the No.X importer of glufosinate-ammonium from China, the trade war and tariffs might explain the slowdown and decline, in addition to the COVID-XX epidemic. In XXXX, as the impact of the COVID-XX epidemic diminished, glufosinate-ammonium producers gradually recovered their production capacity and global demand for glufosinate-ammonium continued to grow, resulting in a significant increase in export volume. In XXXX, due to the high inventory of glufosinate-ammonium overseas, the export volume of glufosinate-ammonium decreased.

In the future, the market demand for glufosinate-ammonium is expected to remain robust for the reasons as follows:

- Expanding scale of paraquat prohibition worldwide;
- Development of glufosinate-ammonium and glyphosate mixed formulations;
- Increasing cultivation of glufosinate-ammonium tolerant crops, stacked glyphosate/glufosinate traits crops, and stacked glufosinate/dicamba traits crops.

China is still the biggest exporter of glufosinate-ammonium in the global market. In China, many producers intend to expand glufosinate-ammonium capacity in the next few years, even though they have to tackle key issues like relatively high production costs, technical barriers, and strict environmental inspections. The price of glufosinate-ammonium has dropped due to the capacity expansion in recent years, producers has stepped up efforts for technological transformation and upgrading and enhancing their production techniques to improve yield and reduce costs, so as to carve out a niche in the glufosinate-ammonium market.

**If you want more information, please feel free to contact us**

Tel: +86-20-37616606 Fax: +86-20-37616968

Email: [econtact@cnchemicals.com](mailto:econtact@cnchemicals.com)