

Analysis of Domestic Pyridine and its Downstream Pesticides

**The First Edition
February 2020**

Researched & Prepared by:

Kcomber Inc.

Copyright by Kcomber Inc.

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

Contents

Executive summary	1
Methodology	2
1 Analysis of background and current situation	3
1.1 Background and current status of domestic pyridine and its downstream pesticides	3
1.2 Export of China's pesticides in 2018.....	4
2 Paraquat	8
2.1 Export of major paraquat producers in China	8
2.2 Major export destinations of China's paraquat.....	8
2.3 Overseas application of China's paraquat	9
3 Diquat	10
3.1 Export of major diquat producers in China.....	10
3.2 Major export destinations of China's diquat	10
3.3 Overseas application of China's diquat	11
4 Chlorpyrifos	12
4.1 Export of major chlorpyrifos producers in China	12
4.2 Major export destinations of China's chlorpyrifos.....	12
4.3 Overseas application of China's chlorpyrifos	13
5 Chlorantraniliprole	14
5.1 Export of major chlorantraniliprole producers in China	14
5.2 Major export destinations of China's chlorantraniliprole.....	14
5.3 Overseas application of China's chlorantraniliprole	14
6 Triclopyr	16
6.1 Export of major triclopyr producers in China.....	16
6.2 Major export destinations of China's triclopyr	16
6.3 Overseas application of China's triclopyr.....	17
7 Conclusion	18

LIST OF TABLES

Table 1.2-1 Top 30 companies of pesticide export value in China
Table 1.2-2 Top 15 pesticides for export in 2018
Table 1.2-3 Top 10 export destinations of China's pesticides in 2018 (by export volume)
Table 1.2-4 Top 10 export destinations of China's pesticides in 2018 (by export value)
Table 2.1-1 Export volume (converted to 100% AI) of major paraquat producers in China, 2017–Sept. 2019, kg
Table 2.2-1 Major export destinations of China's paraquat, 2017–Sept. 2019, kg
Table 3.1-1 Export volume (converted to 100% AI) of major diquat producers in China, 2017–Sept. 2019, kg
Table 3.2-1 Major export destinations of China's diquat, 2017–Sept. 2019, kg
Table 4.1-1 Export volume (converted to 100% AI) of major chlorpyrifos producers in China, 2017–Sept. 2019, kg
Table 4.2-1 Major export destinations of China's chlorpyrifos, 2017–Sept. 2019, kg

Table 5.1-1 Export volume (converted to 100% AI) of major chlorantraniliprole producer in China, 2017–Sept. 2019, kg

Table 5.2-1 Major export destinations of China's chlorantraniliprole, 2017–Sept. 2019, kg

Table 6.1-1 Export volume (converted to 100% AI) of major triclopyr producers in China, 2018–Sept. 2019, kg

Table 6.2-1 Major export destinations of China's triclopyr, 2018–Sept. 2019, kg

LIST OF FIGURES

Figure 3.3-1 Application of diquat in major foreign countries

Figure 4.3-1 Application of chlorpyrifos in major foreign countries

Figure 5.3-1 Application of chlorantraniliprole in major foreign countries

Figure 6.3-1 Application of triclopyr in major foreign countries

1 Introduction

China is the largest producer and exporter of pesticide technical in the world. At present, developing compounds containing pyridine have become a popular direction in pesticide technical producers with pioneering spirits.

Pyridine, one of the fundamental elements in synthesis of the fourth generation heterocyclic pesticides, is mainly used in production of paraquat, diquat, chlorpyrifos and etc. Besides, many new varieties containing pyridine are in development and research. Rapid advances of pesticide industry in China, especially of herbicides such as paraquat and diquat, have helped the pyridine industry go on a fast track. Pyridine is an important element in the new generation of environmentally-friendly, high-efficiency and low-toxicity insecticides and herbicides. It has a broad prospect in pesticide deep processing and deserves further development.

Pyridine can be used in almost all major categories of pesticides. There are many pesticides containing pyridine in industrial production. Among the registered products with pyridine-included active ingredients in China, paraquat, chlorpyrifos, imidacloprid, diquat and nicosulfuron are the major pesticide varieties with mature market and large supply. Other developed, promising pyridine-containing pesticides are fluazinam, fluridon, fluzifop-butyl, acetamiprid, nitenpyram and diflufenican, etc.

In this report, CCM will do analysis of domestic pyridine and its downstream pesticides from the following aspects:

- ✓ Analysis of background and current situation
- ✓ Export of major producers in China
- ✓ Major export destinations
- ✓ Overseas application

2 Methodology

- Desk research

The sources of desk research are various, including published magazines, journals, government statistics, industrial statistics, association seminars as well as information from the Internet. A lot of work has gone into the compilation and analysis of the obtained information.

- Data processing and presentation

The data collected and compiled were sourced from:

- Published articles from Chinese periodicals, magazines, journals, and the third-party databases
- Government statistics & customs statistics
- Comments from industrial experts
- CCM's innovative database
- Professional databases from other sources
- Information from the internet

- Telephone investigation

The interviewees included the following groups:

- Key producers
- Key end users
- Key traders
- Material suppliers
- Associations involved
- Industry experts

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 were held in order to analyse the data and draw the conclusions.

3 Executive summary

In recent years, with breakthroughs in industrial synthesis technology of pyridine in China, domestic production capacity of pyridine has increased greatly. There also had anti-dumping measures on imported pyridine, so the import volume shrank rapidly. As China's pyridine saw its price go down by a large amount and its supply jump at home, good chances have been created for manufacturers to develop downstream products. Chloropyridine compounds is one of the most important downstream products of pyridine, with wide applications and broad prospects.

In October 2019, China Crop Protection Industry Association published the List of Top 30 Companies of Pesticide Export Value in China in 2018. Newcomers are CAC Nantong Chemical Co., Ltd., Hunan Haili Chemical Industry Co., Ltd., Maxunitech Inc., Hailir Pesticides and Chemicals Group Co., Ltd. and Shandong Cynda Chemical Co., Ltd. The one whose ranking has risen fastest is Jiangsu Changqing Agrochemical Co., Ltd.

Since the sale and use of paraquat AS was banned in China on 1 July, 2016, domestic paraquat producers have mainly maintained their paraquat businesses through export. The largest domestic paraquat exporter is Nanjing Red Sun, which exported XXX tonnes in 2018, followed by Nantong Syngenta and Shandong Luba. The majority of paraquat technical produced in China is for export, and the share of export to the output has shown an upward trend in recent years. Major export destinations are Brazil, Indonesia, the United States, Thailand, Nigeria and etc., but the number of destinations was not large. In 2018 and 2019, XXX was the top destination of China's paraquat technical, followed by XXX and XXX.

As of Q3 2019, the three producers with the largest export volume are Nanjing Red Sun, Zhejiang Funong and Shandong Luba. In 2018, China's export value of diquat reached USDXXX. And the top three export destinations were XXX, XXX and XXX.

Major chlorpyrifos producers in China are Nanjing Red Sun, Zhejiang Xinnong, Jiangsu Fengshan, Hubei Benxing and Shandong Tiancheng. Among them, Nanjing Red Sun always ranks the first by export volume. Major export destinations of China's chlorpyrifos are Vietnam, Israel, Thailand, Argentina, Brazil, Indonesia and etc. In 2018, XXX was the top destination, to which the export volume reached XXX tonnes.

At present, DuPont Agricultural is a major chlorantraniliprole producer in China. In 2018, the company exported XXX tonnes of chlorantraniliprole. As of Q3 2019, major export destinations of China's chlorantraniliprole were XXX, XXX, XXX, XXX and XXX.

Major triclopyr producers in China are Li'er Chemical, MAX, Hebei Wanquan Lihua, Hubei Benxing and Hunan Bide. Among them, Li'er Chemical is the largest triclopyr exporter in China. As of Q3 2019, major export destinations of China's triclopyr were XXX, XXX, XXX, XXX and etc. Among them, XXX is the No.1 export destination of China's triclopyr. In 2018, China exported XXX tonnes of triclopyr (converted to 100% AI) to XXX.

4 What's in this report

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

.....

1 Analysis of background and current situation

1.1 Background and current status of domestic pyridine and its downstream pesticides

Breakthroughs in industrial synthesis of pyridine

China's pyridine production began in 1950, mainly refined from coal tar. Scale production started from early 21st century. In 2001, XXX in China and Reilly Industries Inc. from the United States jointly constructed a set of XXX t/a pyridine synthesis production device. In 2004, XXX constructed a set of XXX t/a pyridine production equipment (with independent intellectual property right) in XXX, which marked a major breakthrough in pyridine production technology in China. Since then, China no longer relied solely on imported pyridine, and it also promoted development and production of pyridine and its downstream products in China. Since 2006, development in pyridine and its downstream derivatives quickened. Production facilities have been established in XXX, XXX, XXX, XXX and XXX provinces. At present, China's pyridine manufacturers are mainly concentrated in XXX and XXX provinces, and the scale of pyridine production is still expanding.

Anti-dumping measures on imported pyridine

.....

Major downstream pesticides

- Paraquat and diquat

.....

- Chlorpyrifos

.....

- Chlorantraniliprole

.....

- Triclopyr

.....

1.2 Export of China's pesticides in 2018

.....

Table 1.2-1 Top 30 companies of pesticide export value in China

Rankings in 2018	Rankings in 2017	Companies
1	XXX	XXX
2	XXX	XXX
3	XXX	XXX
4	XXX	XXX
...
29	XXX	XXX
30	XXX	XXX

Source: China Crop Protection Industry Association

.....

Table 1.2-2 Top 15 pesticides for export in 2018

Rankings	Active ingredient	Amount, million USD	Proportion, %	Volume, tonne	Proportion, %
1	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX
...
15	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX

Source: China Crop Protection Industry Association

.....

Table 1.2-3 Top 10 export destinations of China's pesticides in 2018 (by export volume)

Ranking	Country	Volume, tonne	Proportion, %
1	XXX	XXX	XXX
2	XXX	XXX	XXX
3	XXX	XXX	XXX
4	XXX	XXX	XXX
5	XXX	XXX	XXX
6	XXX	XXX	XXX
7	XXX	XXX	XXX
8	XXX	XXX	XXX
9	XXX	XXX	XXX
10	XXX	XXX	XXX

Source: China Crop Protection Industry Association

.....

Table 1.2-4 Top 10 export destinations of China's pesticides in 2018 (by export value)

Ranking	Country	Value, million USD	Proportion, %
1	XXX	XXX	XXX
2	XXX	XXX	XXX
3	XXX	XXX	XXX
4	XXX	XXX	XXX
5	XXX	XXX	XXX
6	XXX	XXX	XXX
7	XXX	XXX	XXX
8	XXX	XXX	XXX
9	XXX	XXX	XXX
10	XXX	XXX	XXX

Source: China Crop Protection Industry Association

2.3 Overseas application of China's paraquat

.....

3 Diquat

3.1 Export of major diquat producers in China

.....

3.2 Major export destinations of China's diquat

.....

3.3 Overseas application of China's diquat

.....

Conclusion

.....

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

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

Email: econtact@cnchemicals.com