

Atrazine Market and Production in China

The Fourth Edition

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1. Introduction

Atrazine, a triazine herbicide, is widely used worldwide, due to its good herbicidal effect, safety to crops and economical price. China is not only a major consumption country of atrazine at home, but also a key supplier at abroad. This report has carried on the analysis of atrazine, including registration, production, producers, import, export, consumption, and price change, as well as its competing products in China. This report can guide investments and business movements for the players who pay close attention to atrazine industry or try to find opportunities from it.

This is CCM's fourth edition report on Chinese atrazine industry and it attaches importance to the following parts:

- Update the registration data related to atrazine technical and formulations in China as of 17, Aug. 2017.
- Update the supply of atrazine in China including capacity, output, key producers and potential producers in China in 2014–H1 2017.
- Update the exports data of atrazine in China by month, destination, exporter and manufacturer in 2013–2016.
- Update the prices of atrazine technical and formulations and the main raw material cyanuric chloride in 2014–H1 2017.
- Update the consumption of atrazine in China including volume, value and consumption structure in 2014–2016.
- The competing products of atrazine in China including 2,4-dichlorophenoxyacetic acid and acetochlor are provided as well.

2. Approach for this report

Methodology and source

Desk research

Sources of desk research are various including published magazines, journals, government statistics, industrial statistics, customs statistics, associated seminars as well as information from the Internet. A lot of work has been done to compile and analyze the information obtained. When necessary, checks were made with Chinese market players regarding market information such as production, demand, and competition.

Telephone interviews

CCM carried out extensive telephone interviews with major participants in the industry chain of the products mentioned in this report throughout upstream to downstream. The interviewees cover:

- Manufacturers
- Traders
- Industrial associations
- Local governments
- Researchers and experts
- Farmers

Data processing and presentation

The data collected and compiled are sourced from:

- Published articles from Chinese periodicals, magazines, and journals
- Government statistics & customs statistics
- Telephone interviews with Chinese manufacturers, traders, government and farmers
- Comments from industrial experts
- CCM's database
- Information from the Internet
- Third-party databases

The data from various channels have been combined to make this report as precise and scientific as

possible. Throughout the process, a series of internal discussions have been held in order to analyze the data and draw conclusions from them.

Definition and glossary

In this report, atrazine technical refers to atrazine 97% technical (TC); atrazine formulations refer to atrazine 38% SC, atrazine 48% WP, atrazine 50% SC, atrazine 80% WP and atrazine 90% WDG; when "atrazine" is mentioned, it includes both atrazine technical and atrazine formulations.

Apparent consumption equals production + import - export, which is one of the factors reflecting demand. Assuming the inventory stays the same every year, the apparent consumption also equals to the actual consumption.

Unit

USD: US dollar, currency unit in the US

RMB: currency unit in China, also named Renminbi

Tonne: ton equals to metric ton in this report

/t: per tonne

t/a: tonne per year, tonne/annual

Table Main abbreviations and their full names in the report

Abbreviation	Full name
AI	Active ingredient
ICAMA	The Institute for the Control of Agrochemicals, Ministry of Agriculture
SC	Suspension Concentrate
SE	Suspension Emulsion
WDG	Water Dispersible Granule
WP	Wettable Powder
AS	Aqueous Solution
EC	Emulsifiable Concentrate
OD	Oil Dispersion
CAGR	Compound Annual Growth Rate

Table USD/CNY exchange rate, 2014–June 2017

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
2014	6.1043	6.1128	6.1358	6.1553	6.1636	6.1557	6.1569	6.1606	6.1528	6.1441	6.1432	6.1238	6.1428
2015	6.1272	6.1339	6.1507	6.1302	6.1143	6.1161	6.1167	6.3056	6.3691	6.3486	6.3666	6.4476	6.2288
2016	6.5527	6.5311	6.5064	6.4762	6.5315	6.5874	6.6774	6.6474	6.6715	6.7442	6.8375	6.9182	6.6425
2017	6.8918	6.8713	6.8932	6.8845	6.8827	6.8019	-	-	-	-	-	-	-

Source: The People's Bank of China

3. Executive summary

Atrazine, a triazine herbicide, is widely used worldwide, due to its good herbicidal effect, safety to crops and economical price. China is not only a major consumption country of atrazine at home, but also a key supplier at abroad.

- Production

In H1 2017, there were mainly 9 companies engaged in the production of atrazine technical in China. In 2014–2016, the domestic capacity of atrazine technical has increased from 124,000 t/a to 134,000 t/a, while its output first decreased from 68,000 tonnes to 61,600 tonnes and then increased to 67,000 tonnes. In H1 2017, the capacity and output of atrazine in China was 134,000 t/a and 29,000 tonnes respectively.

- Import & export

With abundant supply, China imports a small quantity of atrazine. In fact, China's atrazine is export-oriented, with annual export volume of atrazine technical and formulations (converted to 97% technical) accounted for about 70% of the domestic annual output since 2008. In 2016, the export volume has increased by 23.64% year on year from 41,765 tonnes to 51,639 tonnes, and the export value has increased by 17.41%.

- Price

The price of atrazine is mainly affected by the price of its raw materials. In 2014–2016, the domestic ex-works price of atrazine 97% technical gradually declined due to the decreasing price of its raw material. In H1 2017, the domestic ex-works price of atrazine 97% technical rebounded as the price of raw material cyanuric chloride gradually stabilized.

- Consumption

Atrazine is primarily applied to control annual weeds in corn and sugarcane fields. China consumed over 16,000 tonnes of atrazine products (converted to 97% technical) every year in 2014–2016. And in 2014–2016, China's consumption value of major atrazine formulations has declined from USD82.14 million to USD67.27 million (by ex-works price level), with a CAGR of -9.50%. In general, the domestic demand for atrazine was weak in 2015 and 2016, mainly due to the decline in application area of corn and sugarcane and its long residual effect.

4. What's in this report?

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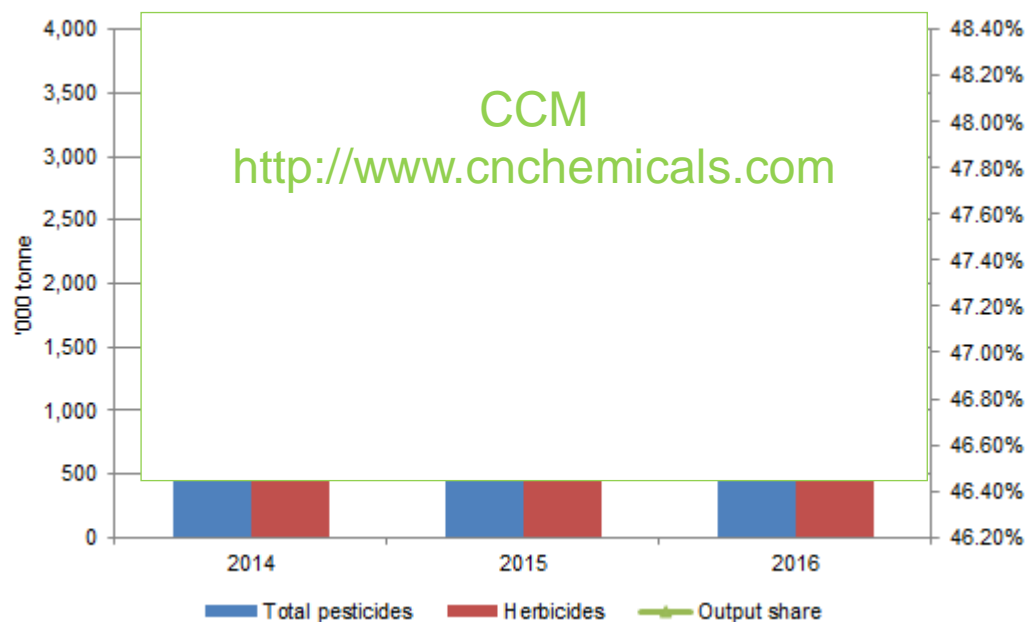
1 Overview of atrazine industry in China

1.1 Brief introduction to pesticide industry in China

In recent two decades, the pesticide industry in China has been developing rapidly. The output of pesticides has almost doubled every five years while pesticide varieties have increased several times as well, which makes China become a major supplier of pesticides in the world. Now China can produce more than 400 varieties of pesticides and export more than 400 varieties of pesticides to other countries, among which around 200 are widely produced. Nowadays, China is not only a pesticide producer for guaranteeing its own agricultural production, but also an important pesticide exporter for other countries.

Production

Figure 1.1-1 Output volume and output share of herbicides in pesticides in China, 2014–2016



Note: The data above are calculated by 100% technical.

Source: The National Bureau of Statistics of China and CCM

Import and export

Table 1.1-1 China's imports and exports of pesticides, 2014–2016

Year	Pesticides				Herbicides				Share			
	Import		Export		Import		Export		Import		Export	
	Volume, tonne	Value, million USD	Volume, tonne	Value, million USD	Volume, tonne	Value, million USD	Volume, tonne	Value, million USD	Volume	Value	Volume	Value
2014	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2015	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

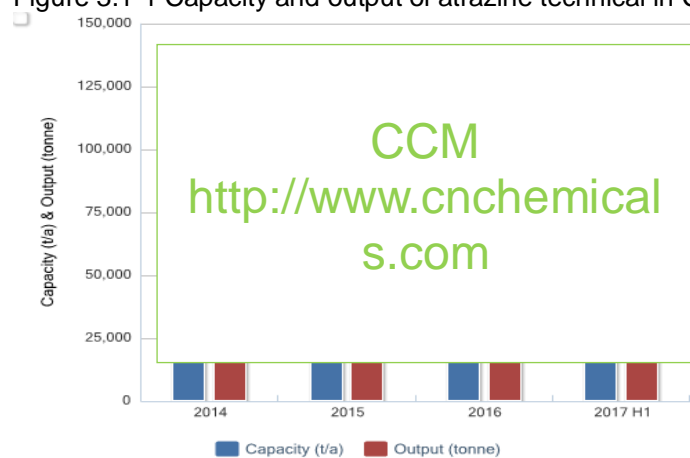
Source: China Customs

3 Supply of atrazine in China, 2014–H1 2017

3.1 Summary of atrazine technical production

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Figure 3.1-1 Capacity and output of atrazine technical in China, 2014–H1 2017



Source: CCM

Figure 3.1-2 Distribution of capacity of atrazine technical in China by region, 2016



Source: CCM

3.2 Key atrazine technical manufacturers

Table 3.2-1 Capacity and output of major atrazine technical producers in China, 2014–H1 2017

No.	Manufacturer	Abbreviation	Location	Status, Aug. 2017	2014		2015		2016		2017 H1	
					Capacity, t/a	Output, tonne	Capacity, t/a	Output, tonne	Capacity, t/a	Output, tonne	Capacity, t/a	Output, tonne
1	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.	Zhejiang Zhongshan	Zhejiang	Active	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
6	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
7	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
8	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
Total					XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Note: Zhejiang Zhongshan Chemical Industry Group Co., Ltd. has two atrazine technical production sites, one in Zhejiang Province (20,000 t/a) and the other in Anhui Province (10,000 t/a).

Source: CCM

4 Circulation of atrazine in China

4.1 Import and export of atrazine, 2013–2016

By month

Table 4.1-1 China's exports of atrazine by month, 2016

Month	38% SC		48% WP		50% SC		80% WP		90% WDG		97% Tech.		Total volume (converted to 97% technical, t)	Total value (USD)
	Volume (t)	Price (USD/kg)	Volume (t)	Price (USD/kg)	Volume (t)	Price (USD/kg)	Volume (t)	Price (USD/kg)	Volume (t)	Price (USD/kg)	Volume (t)	Price (USD/kg)		
January	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
February	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
March	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
April	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
May	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
June	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
July	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
August	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
September	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
October	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
November	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
December	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: China Customs & CCM

By destination

Table 4.1-5 China's exports of atrazine by destination, 2016

No.	Destination	38% SC (t)	48% WP (t)	50% SC (t)	80% WP (t)	90% WDG (t)	97% Tech. (t)	Total volume (converted to 97% technical, t)	Total value (USD)
1	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
...	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
13	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
14	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
15	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Note: Top 14 export destinations accounted for over 90% of total export volume (converted to 97% technical).

Source: China Customs & CCM

By exporter

Table 4.1-9 China's exports of atrazine by exporter, 2016

No.	Exporter	38% SC (t)	48% WP (t)	50% SC (t)	80% WP (t)	90% WDG (t)	97% Tech. (t)	Total volume (converted to 97% technical, t)	Total value (USD)
1	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
6	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
7	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
8	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
9	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
10	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
11	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
12	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
13	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
14	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
15	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Note: The top 14 exporters accounted for over 90% of total export volume (converted to 97% technical).

Source: China Customs & CCM

By Manufacturer

Table 4.1-13 China's exports of atrazine by manufacturer, 2016

No.	Manufacturer	38% SC (t)	48% WP (t)	50% SC (t)	80% WP (t)	90% WDG (t)	97% Tech. (t)	Total volume (converted to 97% technical, t)	Total value (USD)
1	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
5	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
6	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
7	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
8	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Total		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Note: Top 7 manufacturers accounted for over 95% of total export volume (converted to 97% technical).

Source: China Customs & CCM

4.2 Price of atrazine in China, 2014–H1 2017

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Figure 4.2-2 Monthly ex-works price of atrazine 97% technical in China, Jan. 2014–June 2017



Source: CCM

Figure 4.2-3 Annual ex-works price of atrazine formulations in China, 2014–2016



Source: CCM

5 Consumption of atrazine in China, 2014–2016

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Table 5-1 Apparent consumption of atrazine (converted to 97% technical) in China, 2014–2016, tonne

Year	Output	Export	Import	Apparent consumption
2014	XXX	XXX	XXX	XXX
2015	XXX	XXX	XXX	XXX
2016	XXX	XXX	XXX	XXX

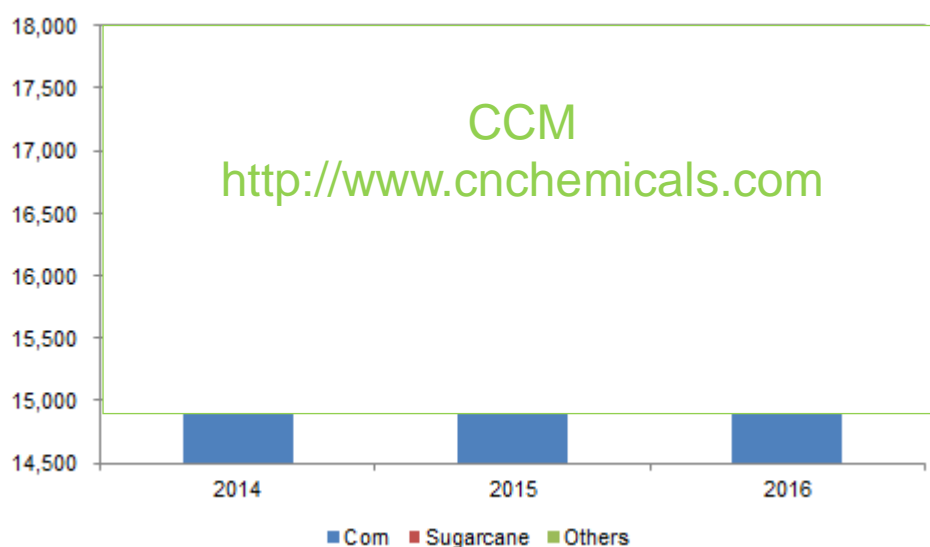
Note: Apparent consumption volume = Output - Export + Import
Source: CCM

Table 5-2 Actual consumption volume and market value of major atrazine formulations in China, 2014–2016

Year	Consumption volume, tonne					Market value (by ex-works price level), million USD				
	38% SC	50% SC	80% WP	90% WDG	Total	38% SC	50% SC	80% WP	90% WDG	Total
2014	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2015	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX

Source: CCM

Figure 5-1 Actual consumption structure of atrazine formulations (converted to 97% technical) by crop in China, 2014–2016, tonne



Source: CCM

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