

Survey of Acetochlor in China 2023

The Tenth Edition

October 2023

Researched & Prepared by:

Kcomber Inc.

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Contents

Executive summary	1
Methodology and source	2
1 Industry overview	4
1.1 Brief introduction to pesticide industry in China	4
1.2 Position of acetochlor in China's herbicide industry.....	5
2 Supply	6
2.1 Production technology	6
2.2 Registration.....	7
2.3 Production, 2018–2023E	9
3 Circulation	12
3.1 Price, 2017–Sept. 2023	12
3.2 Export, H1 2023.....	14
3.3 Export, 2019–2021.....	16
3.3.1 By month	16
3.3.2 By destination.....	19
3.3.3 By exporter	23
4 Consumption, 2019–2023E	26
5 Outlook, 2024–2028	28

LIST OF TABLES

Table 1.1-1 China's imports and exports of pesticides and herbicides, 2019–2022
Table 1.2-1 Output volume and output share of acetochlor in herbicides industry in China, 2018–2022
Table 2.1-1 Comparison on quality of acetochlor technical between the two production routes adopted in China
Table 2.2-1 Registrations of acetochlor technical in China, as of 6 Sept., 2023
Table 2.2-2 Registrations of acetochlor formulations in China, as of 6 Sept., 2023
Table 2.3-1 Capacity and output of key acetochlor technical producers in China, 2020–2023E
Table 3.2-1 China's exports of acetochlor technical and formulations by month, H1 2023
Table 3.2-2 China's exports of acetochlor technical and formulations by destination, H1 2023
Table 3.2-3 China's exports of acetochlor technical and formulations by exporter, H1 2023
Table 3.3.1-1 China's exports of acetochlor technical and formulations by month, 2021
Table 3.3.1-2 China's exports of acetochlor technical and formulations by month, 2020
Table 3.3.1-3 China's exports of acetochlor technical and formulations by month, 2019
Table 3.3.2-1 China's exports of acetochlor technical and formulations by destination, 2021
Table 3.3.2-2 China's exports of acetochlor technical and formulations by destination, 2020
Table 3.3.2-3 China's exports of acetochlor technical and formulations by destination, 2019
Table 3.3.3-1 China's exports of acetochlor technical and formulations by exporter, 2021
Table 3.3.3-2 China's exports of acetochlor technical and formulations by exporter, 2020
Table 3.3.3-3 China's exports of acetochlor technical and formulations by exporter, 2019
Table 4-1 Apparent consumption of acetochlor technical in China, 2019–2023E

Table 4-2 Actual consumption of acetochlor in China by crop, 2023E

LIST OF FIGURES

Figure 1.1-1 Output and share of herbicides in China's pesticide industry, 2018–2022

Figure 2.1-1 Methylene route for producing acetochlor technical in China

Figure 2.1-2 Ether route for producing acetochlor technical in China

Figure 2.3-1 Capacity and output of acetochlor technical (calculated by 92% technical) in China, 2018–2023E

Figure 2.3-2 Distribution of active acetochlor technical producers in China by output, 2023E

Figure 3.1-1 Monthly ex-works price of 92% acetochlor technical in China, Jan. 2021–Sept. 2023

Figure 3.1-2 Annual ex-works price of 92% acetochlor technical in China, 2017–2022

Figure 4-1 Actual consumption share of acetochlor in China by crop, 2023E

Figure 5-1 Supply (output) trend of acetochlor technical (calculated by 92% technical) in China, 2024–2028, tonne

Figure 5-2 Demand trend of acetochlor in China, 2024–2028, tonne

Executive summary

Acetochlor is mainly used to control weeds in the fields of corn, soybean, peanut and other crops in China. As of 6 Sept., 2023, the number of registrations of acetochlor in China increased to 713 from 688 in Sept. 2022. And the number of registrations of acetochlor technical in China remained the same. As for acetochlor formulations, there were 256 registration entries for single formulations and 428 for mixed formulations as of Sept. 2023, the amounts increasing slightly from the numbers registered in Sept., 2022.

- Production

In recent years, acetochlor industry in China has experienced overcapacity—total capacity of acetochlor technical has remained much larger than the output. In 2023, domestic capacity for acetochlor technical is 89,000 t/a; the output is expected to stand at 24,500 tonnes, or 22,540 tonnes (100% AI volume). It is unlikely to see a capacity expansion of acetochlor technical in China in the next five years, and the capacity may even go down further in the long run.

- Export

According to export data of acetochlor technical and formulations updated by Tranalysis on 7 Sept., 2022, some 1,328 tonnes, or 1,222 tonnes (100% AI volume) of acetochlor products were exported to Pakistan, Thailand, Mexico, Vietnam, the US, Nigeria, Chile and Tanzania in H1 2023. Of these countries, Pakistan was the largest export destination in terms of export volume.

- Consumption

Acetochlor can be used for pre-emergent control of annual weeds and some broadleaf weeds in the fields of corn, cotton, peanut, soybean, etc. In 2023, the apparent consumption (calculated by 100% AI, the same below) is estimated to be about 16,067 tonnes, down 0.65% year on year; the actual consumption of acetochlor technical will be about 16,243 tonnes. During 2019–2023, the apparent consumption of acetochlor technical showed a general downward trend.

Methodology and source

This report is drafted by diverse methods as follows:

Desk research

The sources of desk research are various, including published journals, government statistics, industrial statistics, customs statistics, as well as information from the Internet. Information obtained has been compiled and analysed. When necessary, checks will be made with players in China's acetochlor industry regarding market information such as key producers, production situation, and trend of product price.

Telephone interview

Extensive telephone interviews have been carried out in order to grasp the actual market situation of acetochlor in China.

Interviewees cover:

- Producers
- Traders

Internet search

CCM contacted with the players in the acetochlor industry through B2B websites and software.

Data processing and presentation

The data collected and compiled were sourced from:

- Published articles from periodicals, magazines and journals
- Statistics from local governments and international institutes
- Telephone interviews with domestic suppliers, traders, industrial experts
- Third-party data providers
- Information from the Internet

Data obtained 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 made in order to analyse the data and have conclusions drawn.

Abbreviation

AI: active ingredient
EC: emulsifiable concentrate
EW: emulsion oil in water
OD: oil dispersion
SC: suspension concentrate
SE: suspo-emulsion
TC: technical material
WP: wettable powder
CAGR: compound annual growth rate
CCPIA: China Crop Protection Industry Association
ICAMA: Institute for the Control of Agrochemicals, Ministry of Agriculture and Rural Affairs of the People's Republic of China

Unit

Tonne: equals to metric ton in this report
/t: per tonne
t/a: tonne/annum, tonne per year
USD: US dollar, currency unit in the US
RMB: currency unit in China, also named yuan

Table 1 USD/CNY exchange rate, Jan. 2017–Oct. 2023

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
2017	6.8918	6.8713	6.8932	6.8845	6.8827	6.8019	6.7772	6.7148	6.5909	6.6493	6.6300	6.6067	6.7662
2018	6.5079	6.3045	6.3352	6.2764	6.3670	6.4078	6.6157	6.8293	6.8347	6.8957	6.9670	6.9431	6.6070
2019	6.8482	6.7081	6.6957	6.7193	6.7344	6.8896	6.8716	6.8938	7.0883	7.0726	7.0437	7.0262	6.8826
2020	6.9614	6.9249	6.9811	7.0771	7.0690	7.1315	7.0710	6.9980	6.8498	6.7796	6.7050	6.5921	6.9284
2021	6.5408	6.4623	6.4754	6.5584	6.4895	6.3572	6.4709	6.4660	6.4680	6.4604	6.4192	6.3693	6.4615
2022	6.3794	6.3580	6.3014	6.3509	6.5672	6.6651	6.6863	6.7467	6.8821	7.0992	7.2081	7.1225	6.6972
2023	6.9475	6.7492	6.9400	6.8805	6.9054	7.0965	7.2157	7.1283	7.1788	7.1789	-	-	-

Source: The People's Bank of China

1 Industry overview

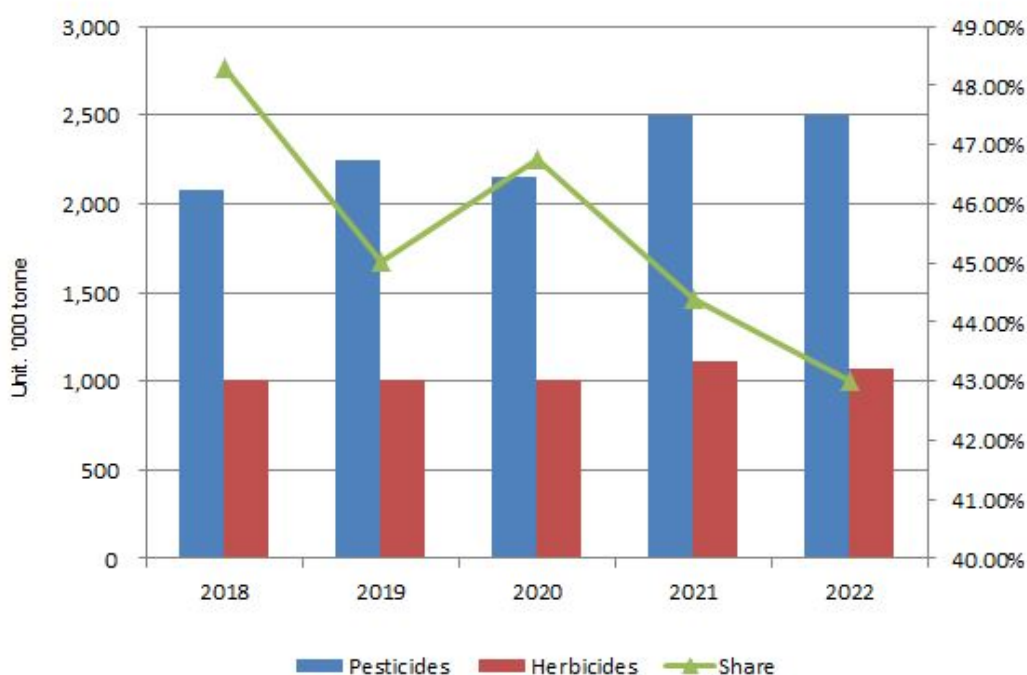
1.1 Brief introduction to pesticide industry in China

China is now the world's largest exporter of pesticides, and herbicide is an important pesticide category. In recent years, amid rising labor costs as well as the pursuit of higher efficiency and cost-effectiveness, herbicides have been widely used in agricultural production. However, the abuse of herbicides can easily lead to deterioration of ecological environment and soil fertility. Therefore, in recent years, multiple environmental protection policies have been rolled out and the output of herbicides in China showed a general downward trend. In 2022, China's herbicide output is 1,073,650 tonnes (converted to 100% technical, the same below).

With regard to export, China exported about 2,400,000 tonnes of pesticides in 2022, a year-on-year growth of 8.99%. The export volume of Chinese herbicides dropped by 13.38% YoY to roughly 1,204,000 tonnes in 2022, which accounted for 50.17% of China's pesticide exports—nearly 13 percentage points lower than the counterpart in 2021. The total values of China's herbicide exports in 2022 rocketed by some 30% year on year to USD6.37 billion.

With the structural adjustment of the pesticide industry and development of products with higher added value and efficacy, the structure of pesticide output in China has improved. China's output proportion of herbicides showed a general downtrend in 2018–2022. In 2022, the proportion of herbicides in China's total pesticide output (calculated by 100% technical) was around 43%.

Figure 1.1-1 Output and share of herbicides in China's pesticide industry, 2018–2022



Note: All the volumes are calculated by 100% technical.
Source: National Bureau of Statistics of China

Table 1.1-1 China's imports and exports of pesticides and herbicides, 2019–2022

Year	Pesticides				Herbicides				Share of herbicides/pesticides			
	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
2019	90,000	762	1,468,000	4,860	14,000	100	992,000	2,715	15.56%	13.12%	67.57%	55.86%
2020	110,000	911	2,514,000	7,624	14,000	78	1,236,000	3,069	12.73%	8.56%	49.16%	40.25%
2021	104,000	917	2,202,000	8,010	17,000	100	1,390,000	4,900	16.35%	10.91%	63.12%	61.17%
2022	120,000	1,100	2,400,000	10,090	15,000	106	1,204,000	6,365	12.50%	9.64%	50.17%	63.08%

Source: National Bureau of Statistics of China

Note: All the volumes are actual volume and all products are formulation products.

1.2 Position of acetochlor in China's herbicide industry

As a herbicide, acetochlor plays an important role in China's crop farming sector. It can be used for pre-emergent control of annual weeds and some broadleaf weeds in the fields of corn, cotton, peanut, soybean, etc. In 2022, acetochlor output made up 2.19% of China's total herbicide output; in general, its share declined quickly during 2018–2022.

Table 1.2-1 Output volume and output share of acetochlor in herbicides industry in China, 2018–2022

Year	Herbicide output, tonne	Acetochlor output, tonne	Share
2018	1,006,000	27,968	2.78%
2019	1,011,000	24,748	2.45%
2020	1,004,000	26,220	2.61%
2021	1,109,000	24,564	2.21%
2022	1,073,650	23,552	2.19%

Note: The output is based on AI content of 100%.

Source: CCM

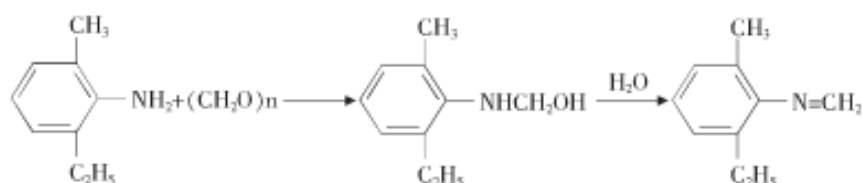
2 Supply

2.1 Production technology

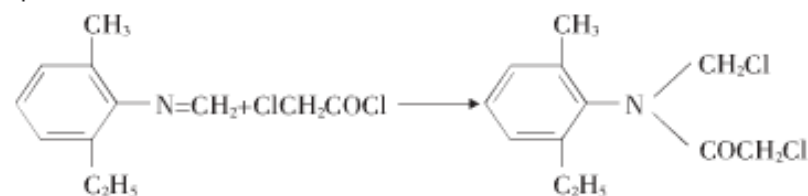
Currently, there are two main routes for producing acetochlor technical in China, namely the methylene route and the ether route. The former, which is listed and supported in the *Plan for Promotion of Cleaner Production Technology in the Pesticide Industry* issued by the Ministry of Industry and Information Technology of the People's Republic of China, is adopted by an increasing number of producers, while the latter is listed as a technology with serious pollution and high environmental risks.

Figure 2.1-1 Methylene route for producing acetochlor technical in China

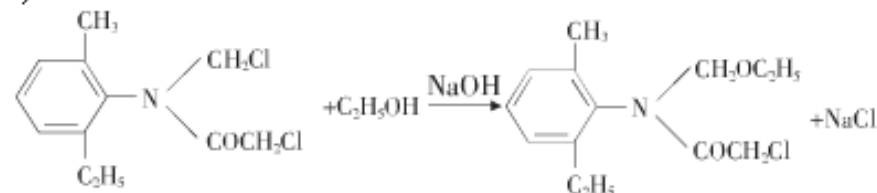
1) Methylene aniline generation



2) Addition reaction



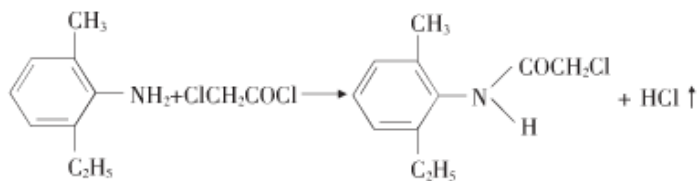
3) Condensation reaction



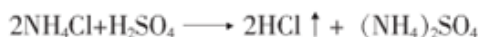
Source: Standard for Discharge of Industrial Water Pollution in Production of Amide Pesticides

Figure 2.1-2 Ether route for producing acetochlor technical in China

1) Acylation



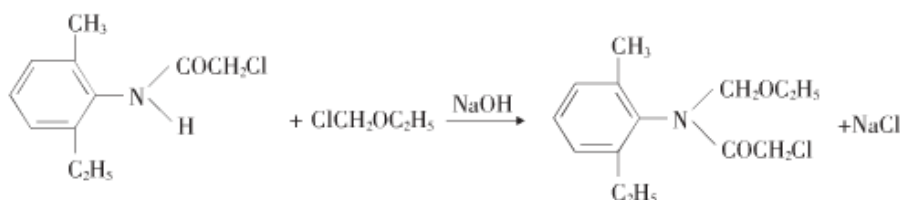
2) Hydrochloric acid gas generation



3) Etherification



4) Condensation reaction



Source: Standard for Discharge of Industrial Water Pollution in Production of Amide Pesticides

Table 2.1-1 Comparison on quality of acetochlor technical between the two production routes adopted in China

Item	Methylene route	Ether route
Content of active ingredient	≥96%	92%–95%
Yield coefficient	95%–98%	92%–95%

Source: The China Crop Protection Industry Association (CCPIA)

2.2 Registration

Acetochlor is mainly used to control weeds in the fields of corn, soybean, peanut and other crops in China. As of 6 Sept., 2023, the number of registrations of acetochlor in China increased to 713 from 688 in Sept. 2022. And the number of registrations of acetochlor technical in China remained the same. As for acetochlor formulations, there were 256 registration entries for single formulations and 428 for mixed formulations as of Sept. 2023, the amounts increasing slightly from the numbers registered in Sept., 2022.

Table 2.2-1 Registrations of acetochlor technical in China, as of 6 Sept., 2023

No.	Registration number	Content	Registrant	Expire date
1	PD20083132	95%	Shandong Binnong Technology Co., Ltd.	2028/12/9
2	PD20082135	93%	Shangyu Nutrichem Co., Ltd.	2028/11/24
3	PD20081593	93%	Shandong Huayang Technology Co., Ltd.	2028/11/11
4	PD20081193	93%	Jiangsu Changlong Agrochemical Co., Ltd.	2028/9/10
5	PD20080888	94%	Heilongjiang Jixiang Agrochemical Co., Ltd.	2028/7/8
6	PD20080745	93%	Jilin City Green World Agrochemical Co., Ltd.	2028/6/10
7	PD20080635	92%	Capital Industry Construction Technology Co., Ltd.	2028/5/12
8	PD20130949	95%	Fuhua Tongda Chemical Co., Ltd.	2028/5/1
9	PD20080363	93%	Yingde Greatchem Chemicals Co., Ltd.	2028/2/28
10	PD20080359	93%	Jilin Jinqiu Pesticide Co., Ltd.	2028/2/28
11	PD20080344	93%	Shandong Zhongshi Pharmaceutical Co., Ltd.	2028/2/25
12	PD20080268	93%	Taizhou Bailly Chemical Co., Ltd.	2028/2/19
13	PD20080174	93%	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	2028/1/4
14	PD20080106	93%	Shenyang Liansheng Chemical Industry Co., Ltd.	2028/1/4
15	PD20080116	93%	Bailing Technology Co., Ltd.	2028/1/2
16	PD20080087	95%	Shandong Weifang Rainbow Chemical Co., Ltd.	2028/1/2
17	PD20121383	97%	Anhui Futian Agrochemical Co., Ltd.	2027/9/12
18	PD20070260	93%	Labor Kaifeng Agrochemicals Co., Ltd.	2027/9/3
19	PD20070142	93%	Hangzhou Nutrichem Co., Ltd.	2027/5/29
20	PD20110830	97%	Zhongnongfa Henan Agrochemical Co., Ltd.	2026/8/31
21	PD20060128	93%	Shandong Vicome Greenland Chemical Co., Ltd.	2026/6/26
22	PD20101705	95%	LION Agrevo (Nantong) Co., Ltd.	2025/6/28
23	PD20097512	93%	ADAMA Anpon (Jiangsu) Ltd.	2024/11/4
24	PD20097059	93%	Shandong Eshung Industrial Co., Ltd.	2024/10/11
25	PD20096400	93%	Shandong Dacheng Biochemical Co., Ltd.	2024/8/4
26	PD20096271	93%	Inner Mongolia Zhonggao Chemical Co., Ltd.	2024/7/22

No.	Registration number	Content	Registrant	Expire date
27	PD20096089	90%	Inner Mongolia Miraculous Crop Science Co., Ltd.	2024/6/18
28	PD20094256	93%	Shandong Dehao Chemistry Co., Ltd.	2024/3/31
29	PD20082083	93%	Liaoning Dalian Songliao Chemical Co., Ltd.	2023/11/25

Source: The Institute for the Control of Agrochemicals, Ministry of Agriculture and Rural Affairs of the People's Republic of China (ICAMA)

Table 2.2-2 Registrations of acetochlor formulations in China, as of 6 Sept., 2023

Item	Type of formulation	Specifications	Number of registration
Single formulation	EC	50%, 900g/L, 81.50%, 89%, etc.	216
	EW	40%, 50%, 48%, 900g/L	18
	WP	20%, 40%	16
	Others	/	6
	Subtotal	/	256
Mixed formulation	EC	40%, 50%, 82%, 78%, 45%, etc.	150
	WP	20%, 14%, 40%, 18%, 30%, 25%, etc.	117
	SE	40%, 42%, 66%, 52%, 55%, etc.	115
	OD	42%, 40%, 52%, etc.	21
	Others	/	25
	Subtotal	/	428
Total			684

Source: ICAMA

2.3 Production, 2018–2023E

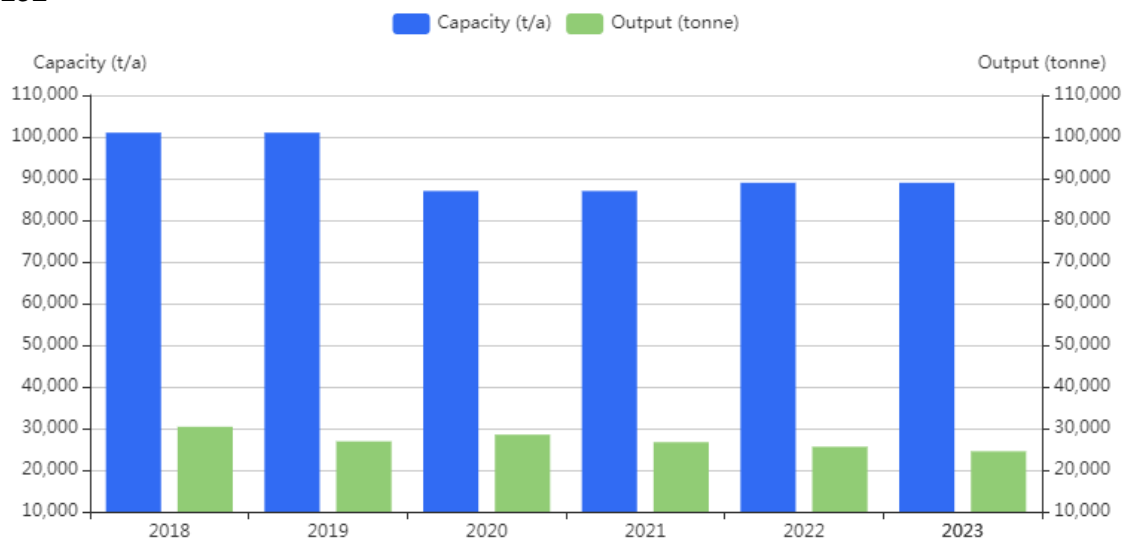
In recent years, acetochlor industry in China has experienced overcapacity—total capacity of acetochlor technical has remained much larger than the output. In 2023, domestic capacity for acetochlor technical is 89,000 t/a; the output is expected to stand at 24,500 tonnes, or 22,540 tonnes (100% AI volume).

During 2018–2023, some producers suspended their production. And there are new projects under construction. In 2019, Shangdong Qiaochang Chemical Co., Ltd. and Jilin Jinqiu Pesticide Co., Ltd. (Jilin Jinqiu) suspended their production of acetochlor technical. In 2020, Jiangsu Lulilai Co., Ltd. stopped its production lines. In 2021, Zhongnongfa Henan Agrochemical Co., Ltd. (Henan Zhongnongfa), with 10,000 t/a of capacity for acetochlor technical, suspended its production lines. In 2022, Henan Zhongnongfa resumed operation of its production lines, and has become one of acetochlor technical suppliers to Jilin Jinqiu. In March 2023, Shenyang Liansheng Chemical Industry Co., Ltd. announced that it intended to build 8,000 t/a of new production capacity for acetochlor technical; subsequently, the company said the new capacity is expected to be put into operation in Dec. 2023.

Jilin Jinqiu, with 3,000 t/a of production capacity for acetochlor technical, has halted the lines in recent years, due to a lack of the intermediate 6-ethyl-o-toluidine (MEA), and an increase in production costs. Now it

mainly focuses on the acetochlor formulation business.

Figure 2.3-1 Capacity and output of acetochlor technical (calculated by 92% technical) in China, 2018–2023E



Source: CCM

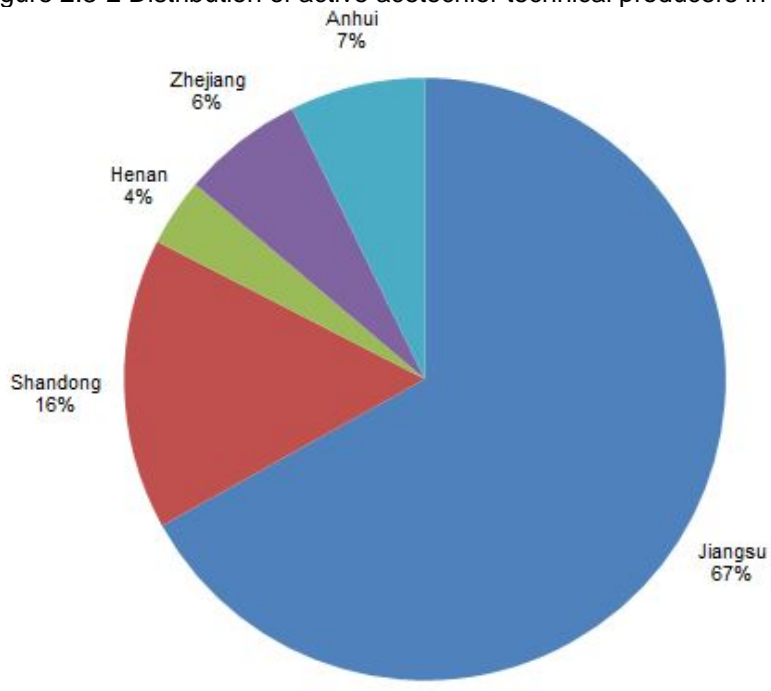
Table 2.3-1 Capacity and output of key acetochlor technical producers in China, 2020–2023E

No.	Producer	Status, 2023	Capacity, t/a				Output, tonne			
			2023	2022	2021	2020	2023	2022	2021	2020
1	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	Active	22,000	22,000	22,000	22,000	7,400	8,000	9,500	12,000
2	Shandong Zhongshi Pesticide Co., Ltd.	Active	20,000	20,000	20,000	20,000	3,000	3,000	4,000	3,000
3	Jiangsu Changlong Agrochemical Co., Ltd.	Active	10,000	10,000	10,000	10,000	7,900	7,800	7,400	7,500
4	Zhongnongfa Henan Agrochemical Co., Ltd.	Active	10,000	10,000	10,000	10,000	900	1,000	0	3,000
5	Jiangsu Laike Crop Protection Co., Ltd.	Active	5,000	5,000	5,000	5,000	2,000	2,800	2,000	200

Note: The production data for 2023 are estimated, based on the existing data in the first three quarters of the year.

Source: CCM

Figure 2.3-2 Distribution of active acetochlor technical producers in China by output, 2023E



Source: CCM

3 Circulation

3.1 Price, 2017–Sept. 2023

The yearly average ex-works price of acetochlor technical in China declined for two consecutive years in 2019 and 2020, but started to rebound in 2021; subsequently, it soared by over 30% YoY to USD6,532.98/t in 2022. Despite the upswings in these two years, the yearly average price in 2023 is estimated to slide, because the monthly price in 2023 has been dipping.

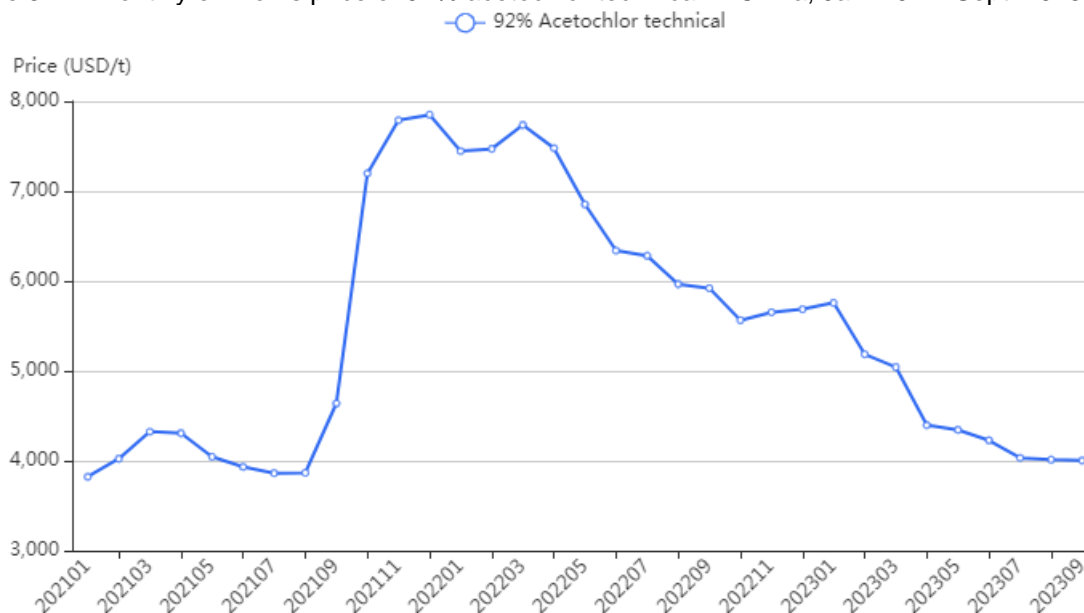
As for the trend of monthly price, the monthly ex-works price of acetochlor technical in China was dropping month by month in 2023 so far; it stood at USD4,003.45/t in Sept. 2023, registering a year-on-year fall of 29.47%.

With the increase in acetochlor producers' operating rates taken into consideration, it is expected that the monthly price will continue to go down in Q4 2023.

The price drop in 2023 was primarily attributed to the following factors:

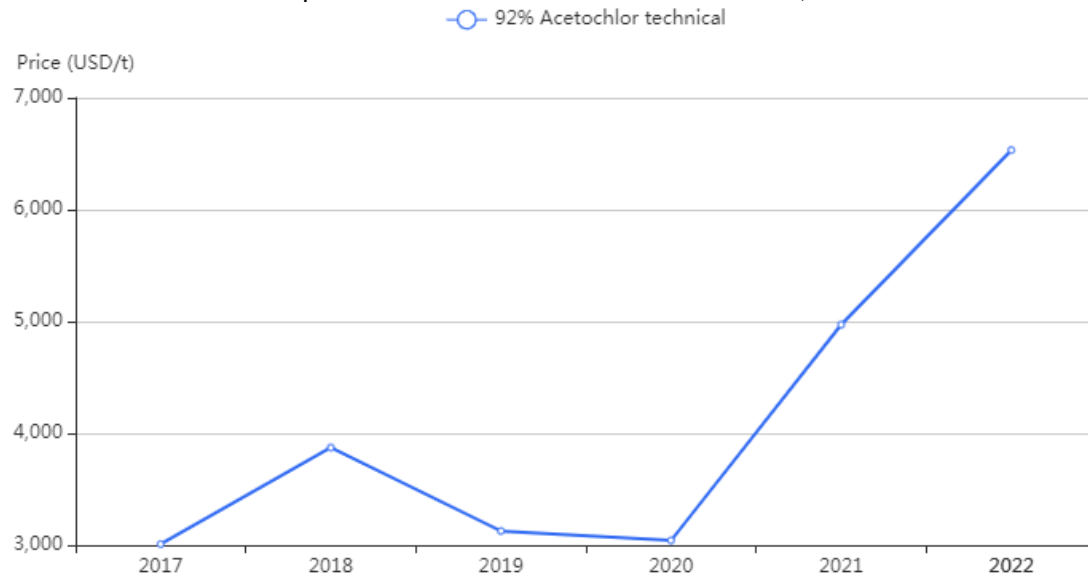
- The supply of acetochlor technical increased, and there is overcapacity in the industry.
- In the slack season from May to Aug., the price of acetochlor usually goes down in China.

Figure 3.1-1 Monthly ex-works price of 92% acetochlor technical in China, Jan. 2021–Sept. 2023



Source: CCM

Figure 3.1-2 Annual ex-works price of 92% acetochlor technical in China, 2017–2022



Source: CCM

3.2 Export, H1 2023

Table 3.2-1 China's exports of acetochlor technical and formulations by month, H1 2023

Month	50% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		Total quantity, tonne
	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	19.800	5.88	0.000	/	0.000	/	16.000	5.10	0.000	/	127.200	5.70	163.000
2	62.560	2.97	0.000	/	0.000	/	192.400	5.04	0.000	/	132.080	5.19	387.040
3	112.000	2.86	0.000	/	0.000	/	152.400	4.91	0.000	/	165.400	4.58	429.800
4	16.000	4.00	0.000	/	0.000	/	64.200	4.10	0.000	/	48.000	4.55	128.200
5	0.000	/	0.000	/	0.000	/	42.000	4.08	0.000	/	94.600	4.09	136.600
6	24.000	2.65	0.000	/	0.000	/	51.200	3.79	0.000	/	8.000	3.98	83.200
Total	234.360	3.20	0.000	/	0.000	/	518.200	4.68	0.000	/	575.280	4.88	1,327.840

Note:

1. The export data of acetochlor technical and formulations in H1 2023 are incomplete. Only the data of exports to the following 8 countries are included: Vietnam, Pakistan, the US, Mexico, Nigeria, Thailand, Chile and Tanzania.

2. The data were updated by Tranalysis on 7 Sept., 2023.

Source: China Customs & CCM

Table 3.2-2 China's exports of acetochlor technical and formulations by destination, H1 2023

No.	Destination	50% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Pakistan	0.000	/	0.000	/	0.000	/	501.000	4.67	0.000	/	160.000	4.91	661.000
2	Thailand	182.560	2.86	0.000	/	0.000	/	0.000	/	0.000	/	64.000	4.64	246.560
3	Mexico	19.800	5.88	0.000	/	0.000	/	0.000	/	0.000	/	212.400	5.23	232.200
4	Vietnam	32.000	3.45	0.000	/	0.000	/	17.200	5.06	0.000	/	138.880	4.41	188.080
5	The US	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
6	Nigeria	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
7	Chile	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
8	Tanzania	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
Total		234.360	3.20	0.000	/	0.000	/	518.200	4.68	0.000	/	575.280	4.88	1,327.840

Note:

1. The export data of acetochlor technical and formulations in H1 2023 are incomplete. Only the data of exports to the following 8 countries are included: Vietnam, Pakistan, the US, Mexico, Nigeria, Thailand, Chile and Tanzania.

2. The data were updated by Tranalysis on 7 Sept., 2023.

Source: China Customs & CCM

Table 3.2-3 China's exports of acetochlor technical and formulations by exporter, H1 2023

No.	Exporter	50% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Jiangsu Changlong Agrochemical Co., Ltd.	0.000	/	0.000	/	0.000	/	225.200	4.80	0.000	/	0.000	/	225.200
2	Shandong Binnong Technology Co., Ltd.	19.800	5.88	0.000	/	0.000	/	0.000	/	0.000	/	166.400	4.89	186.200
3	Shandong Weifang Rainbow Chemical Co., Ltd.	0.000	/	0.000	/	0.000	/	5.000	5.30	0.000	/	104.000	5.05	109.000
4	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	80.000	2.78	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	80.000
5	Eastchem Co., Ltd.	32.000	3.45	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	32.000
6	Nanjing Noleson Biotechnology Co., Ltd.	0.000	/	0.000	/	0.000	/	24.000	4.20	0.000	/	0.000	/	24.000
7	King Elong Group Limited	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	17.600	5.95	17.600
8	Sharda Cropchem Limited	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
9	Valency International Pte Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
10	Nanjing Rising Chemical Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
11	Jiangsu Trustchem Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
12	Nanjing Hengchang Biotechnology Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
13	Noleson Biotechnology Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
14	Sino-Agri Leading Biosciences Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
15	Nova Agro (HK) Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000
	Others	102.560	2.93	0.000	/	0.000	/	264.000	4.62	0.000	/	287.280	4.74	653.840
	Total	234.360	3.20	0.000	/	0.000	/	518.200	4.68	0.000	/	575.280	4.88	1,327.840

Note:

1. The export data of acetochlor technical and formulations in H1 2023 are incomplete. Only the data of exports to the following 8 countries are included: Vietnam, Pakistan, the US, Mexico, Nigeria, Thailand, Chile and Tanzania.

2. The data were updated by Tranalysis on 7 Sept., 2023.

Source: China Customs & CCM

3.3 Export, 2019–2021

3.3.1 By month

According to the export data from Tranalysis, in 2021, China exported some 6,409 tonnes of acetochlor products. Major acetochlor products for export in 2021 were 20% WP, 50% EC, 70% EC, 90% EC, 92% TC, 93% TC, 94% TC and 95% TC.

Table 3.3.1-1 China's exports of acetochlor technical and formulations by month, 2021

Month	20% WP		50% EC		70% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		Total quantity, tonne
	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	0.000	/	0.000	/	0.000	/	802.821	2.91	0.000	/	430.682	3.13	0.000	/	285.563	2.70	1,519.066
2	0.000	/	0.000	/	0.000	/	800.819	3.09	0.000	/	522.112	3.36	32.000	3.95	16.000	2.93	1,370.931
3	0.000	/	0.000	/	0.000	/	39.800	3.20	17.600	4.23	80.208	3.32	0.000	/	81.680	4.37	219.288
4	12.000	3.40	0.000	/	0.000	/	145.200	3.82	0.000	/	48.000	3.76	0.000	/	99.372	4.44	304.572
5	0.000	/	160.000	2.58	0.000	/	0.000	/	0.000	/	121.000	3.71	0.000	/	143.288	3.68	424.288
6	0.000	/	0.000	/	34.750	6.30	17.600	2.77	0.000	/	82.000	3.47	0.000	/	69.000	3.86	203.350
7	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	325.000	4.14	0.000	/	48.005	4.06	373.005
8	0.000	/	24.000	2.54	0.000	/	374.240	4.25	0.000	/	1.000	4.20	0.000	/	196.950	4.07	596.190
9	0.000	/	0.000	/	17.380	6.30	484.000	4.00	0.000	/	64.000	3.90	0.000	/	214.646	4.07	780.026
10	0.000	/	0.000	/	0.000	/	92.028	4.25	0.000	/	126.400	4.07	0.000	/	5.000	3.85	223.428
11	0.000	/	0.000	/	0.000	/	266.190	4.50	0.000	/	0.000	/	0.000	/	0.000	/	266.190
12	0.000	/	0.000	/	0.000	/	36.808	4.51	0.000	/	91.898	7.40	0.000	/	0.000	/	128.706
Total	12.000	3.40	184.000	2.57	52.128	6.30	3,059.506	3.54	17.600	4.23	1,892.300	3.74	32.000	3.95	1,159.504	3.71	6,409.038

Note: 1. Nuances in some data are mainly caused by rounding.
Source: China Customs & CCM

Table 3.3.1-2 China's exports of acetochlor technical and formulations by month, 2020

Month	50% EC		90% EC		92% Tech.		93% Tech.		95% Tech.		97% Tech.		Total quantity, tonne
	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	119.920	2.09	947.667	2.94	0.000	/	115.200	2.77	91.975	2.68	0.000	/	1,274.762
2	26.000	2.07	195.790	3.09	0.000	/	112.000	2.63	0.000	/	0.000	/	333.790
3	110.880	2.04	122.554	3.07	0.000	/	230.200	2.68	195.000	2.76	28.800	2.71	687.434
4	88.260	2.15	86.214	3.00	0.000	/	162.600	2.75	79.750	2.74	0.000	/	416.824
5	69.000	2.16	0.000	/	48.000	2.83	362.120	2.83	165.000	2.80	48.000	2.97	692.120
6	272.000	2.03	255.420	2.88	0.000	/	158.880	2.82	91.320	2.89	0.000	/	777.620
7	80.000	2.03	228.750	3.89	0.000	/	16.000	2.80	27.720	2.91	0.000	/	352.470
8	80.000	2.03	464.775	2.83	0.000	/	18.600	2.82	0.000	/	0.000	/	563.375
9	0.000	/	63.184	3.25	32.000	3.24	16.000	3.85	0.000	/	0.000	/	111.184
10	62.766	3.10	330.000	2.67	0.000	/	16.350	3.58	198.120	2.80	0.000	/	607.236
11	32.000	2.86	220.002	2.85	0.000	/	255.360	2.87	136.500	2.85	0.000	/	643.862
12	16.000	2.05	315.213	2.75	0.000	/	330.160	2.91	145.400	2.88	0.000	/	806.773
Total	956.826	2.16	3,229.569	2.96	80.000	2.99	1,793.470	2.82	1,130.785	2.81	76.800	2.87	7,267.450

Note: 1. Nuances in some data are mainly caused by rounding.
Source: China Customs & CCM

Table 3.3.1-3 China's exports of acetochlor technical and formulations by month, 2019

Month	20% WP		50% EC		81.5% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		97% Tech.		Total quantity, tonne
	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	0.000	/	484.340	2.54	0.000	/	725.762	3.55	0.000	/	85.400	3.17	0.000	/	199.200	3.32	0.000	/	1,494.702
2	0.000	/	153.430	2.55	0.000	/	782.698	3.47	0.000	/	34.000	3.01	64.000	3.13	83.600	3.09	0.000	/	1,117.728
3	0.000	/	548.665	2.39	0.000	/	131.940	3.46	0.000	/	161.600	3.20	0.000	/	175.000	3.15	16.000	3.35	1,033.205
4	0.000	/	224.370	2.31	0.000	/	49.080	4.78	0.000	/	47.600	2.82	0.000	/	120.000	3.02	0.000	/	441.050
5	0.000	/	581.939	2.32	101.191	3.37	70.138	3.98	0.000	/	64.000	2.99	0.000	/	270.225	2.87	0.000	/	1,087.493
6	0.000	/	223.680	2.12	0.000	/	278.107	3.83	13.200	2.91	154.200	3.07	0.000	/	259.200	2.90	0.000	/	928.387
7	0.000	/	420.316	2.16	0.000	/	162.349	3.86	0.000	/	119.000	2.88	0.000	/	6.075	3.03	0.000	/	707.740
8	0.000	/	51.971	2.25	0.000	/	333.328	3.62	0.000	/	51.200	2.99	0.000	/	99.000	2.79	0.000	/	535.499
9	3.000	1.91	44.800	2.20	0.000	/	316.295	3.46	0.000	/	0.000	/	0.000	/	67.600	2.92	0.000	/	431.695
10	0.000	/	92.586	2.19	0.000	/	212.346	3.18	0.000	/	16.000	2.70	0.000	/	112.180	2.84	0.000	/	433.112
11	0.000	/	73.104	2.14	0.000	/	356.650	3.45	0.000	/	16.000	2.83	0.000	/	36.950	2.73	0.000	/	482.704
12	0.000	/	111.520	1.98	1.500	4.31	1,205.460	2.89	0.000	/	229.400	2.94	0.000	/	61.000	2.74	0.000	/	1,608.880
Total	3.000	1.91	3,010.721	2.33	102.691	3.69	4,624.153	3.49	13.200	2.91	978.400	3.02	64.000	3.13	1,490.030	2.95	16.000	3.35	10,302.195

Note: Nuances in some data are mainly caused by rounding.

Source: China Customs & CCM

3.3.2 By destination

In terms of volume, Ukraine, the US, Vietnam, Pakistan and Argentina were the top five destinations of acetochlor exported from China in 2021.

Table 3.3.2-1 China's exports of acetochlor technical and formulations by destination, 2021

No.	Destination	20% WP		50% EC		70% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Ukraine	0.000	/	0.000	/	0.000	/	2803.475	3.48	0.000	/	35.718	5.49	0.000	/	264.003	2.67	3,103.196
2	The US	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	784.982	3.49	0.000	/	471.600	4.08	1,256.582
3	Vietnam	12.000	3.40	184.000	2.57	0.000	/	2.000	5.87	0.000	/	299.000	4.21	0.000	/	219.800	3.78	716.800
4	Pakistan	0.000	/	0.000	/	0.000	/	0.000	/	17.600	4.23	347.600	3.52	32.000	3.95	110.080	3.66	507.280
5	Argentina	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	425.000	3.90	0.000	/	0.016	5.38	425.016
6	Chile	0.000	/	0.000	/	52.128	6.30	185.365	4.08	0.000	/	0.000	/	0.000	/	0.000	/	237.493
7	Mexico	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	94.000	4.62	94.000
8	Zambia	0.000	/	0.000	/	0.000	/	57.079	4.40	0.000	/	0.000	/	0.000	/	0.000	/	57.079
9	The Dominican Republic	0.000	/	0.000	/	0.000	/	11.587	3.36	0.000	/	0.000	/	0.000	/	0.000	/	11.587
10	Paraguay	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.005	6.00	0.005
Total		12.000	3.40	184.000	2.57	52.128	6.30	3,059.506	3.54	17.600	4.23	1,892.300	3.74	32.000	3.95	1,159.504	3.71	6,409.038

Note:

1. Nuances in some data are mainly caused by rounding.

2. The export data of acetochlor technical and formulations in 2021 are incomplete.

Source: China Customs & CCM

Table 3.3.2-2 China's exports of acetochlor technical and formulations by destination, 2020

No.	Destination	50% EC		90% EC		92% Tech.		93% Tech.		95% Tech.		97% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Ukraine	35.200	3.10	2083.177	2.85	0.000	/	0.000	/	70.400	2.89	0.000	/	2,188.778
2	Pakistan	21.000	2.51	0.000	/	32.000	3.24	987.390	2.80	446.000	2.79	0.000	/	1,486.390
3	Vietnam	528.000	2.08	9.190	3.25	48.000	2.83	207.120	2.82	366.385	2.83	0.000	/	1,158.695
4	Argentina	0.000	/	523.000	2.85	0.000	/	0.000	/	100.000	2.77	0.000	/	623.000
5	Thailand	333.060	2.06	3.136	2.06	0.000	/	80.000	2.71	128.000	2.72	40.800	2.71	584.996
6	The US	0.000	/	0.000	/	0.000	/	293.760	2.85	0.000	/	0.000	/	293.760
7	Chile	0.000	/	263.707	3.77	0.000	/	0.000	/	0.000	/	0.000	/	263.707
8	South Africa	0.000	/	90.350	3.04	0.000	/	35.200	2.95	0.000	/	36.000	3.05	161.550
9	Israel	0.000	/	0.000	/	0.000	/	128.000	3.00	0.000	/	0.000	/	128.000
10	Russia	0.000	/	123.200	3.21	0.000	/	0.000	/	0.000	/	0.000	/	123.200
11	Bolivia	0.000	/	38.282	3.12	0.000	/	0.000	/	0.000	/	0.000	/	38.282
12	Singapore	0.000	/	0.000	/	0.000	/	38.000	2.65	0.000	/	0.000	/	38.000
13	Guatemala	0.000	/	36.424	3.10	0.000	/	0.000	/	0.000	/	0.000	/	36.424
14	The Dominican Republic	27.566	3.10	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	27.566
15	Mexico	0.000	/	0.000	/	0.000	/	0.000	/	20.000	3.10	0.000	/	20.000
16	Egypt	0.000	/	17.448	3.10	0.000	/	0.000	/	0.000	/	0.000	/	17.448
17	The UK	0.000	/	16.895	3.24	0.000	/	0.000	/	0.000	/	0.000	/	16.895
18	Uruguay	0.000	/	15.360	2.83	0.000	/	0.000	/	0.000	/	0.000	/	15.360
19	Colombia	0.000	/	0.000	/	0.000	/	13.000	3.07	0.000	/	0.000	/	13.000
20	Guinea	12.000	2.84	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	12.000
21	Bangladesh	0.000	/	0.000	/	0.000	/	11.000	2.65	0.000	/	0.000	/	11.000
22	Zambia	0.000	/	7.200	3.73	0.000	/	0.000	/	0.000	/	0.000	/	7.200
23	Mozambique	0.000	/	2.200	3.77	0.000	/	0.000	/	0.000	/	0.000	/	2.200
	Total	956.826	2.16	3,229.569	2.96	80.000	2.99	1,793.470	2.82	1,130.785	2.81	76.800	2.87	7,267.451

Note:

1. Nuances in some data are mainly caused by rounding.

2. The export data of acetochlor technical and formulations in 2020 are incomplete.

Source: China Customs & CCM

Table 3.3.2-3 China's exports of acetochlor technical and formulations by destination, 2019

No.	Destination	20% WP		50% EC		81.5% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		97% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Ukraine	0.000	/	0.000	/	0.000	/	3,064.775	3.18	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	3,064.775
2	Thailand	0.000	/	1,838.312	2.30	0.000	/	41.296	2.22	0.000	/	64.000	2.93	0.000	/	162.200	3.04	0.000	/	2,105.808
3	Vietnam	3.000	1.91	785.725	2.24	0.000	/	18.725	2.79	13.200	2.91	184.200	3.01	0.000	/	519.950	2.82	0.000	/	1,524.800
4	South Africa	0.000	/	0.000	/	22.519	3.15	502.788	3.64	0.000	/	17.600	3.14	0.000	/	130.355	3.09	0.000	/	673.262
5	Pakistan	0.000	/	38.688	2.45	0.000	/	0.000	/	0.000	/	250.800	3.00	64.000	3.13	211.200	2.98	0.000	/	564.688
6	Argentina	0.000	/	0.000	/	0.000	/	47.434	3.14	0.000	/	38.000	2.86	0.000	/	413.000	3.02	0.000	/	498.434
7	The US	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	336.600	3.06	0.000	/	0.000	/	0.000	/	336.600
8	North Korea	0.000	/	254.150	2.37	0.000	/	18.520	3.09	0.000	/	13.200	3.08	0.000	/	1.125	2.79	0.000	/	286.995
9	New Zealand	0.000	/	0.000	/	0.000	/	199.857	4.22	0.000	/	16.000	2.95	0.000	/	0.000	/	0.000	/	215.857
10	Uruguay	0.000	/	0.000	/	0.000	/	179.400	3.17	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	179.400
11	Mozambique	0.000	/	0.000	/	0.000	/	127.682	3.43	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	127.682
12	Chile	0.000	/	0.000	/	0.000	/	113.310	4.85	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	113.310
13	Egypt	0.000	/	46.296	3.67	0.000	/	63.627	3.33	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	109.923
14	Venezuela	0.000	/	0.000	/	78.672	3.59	18.445	3.16	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	97.117
15	Iran	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	58.000	3.28	0.000	/	16.000	3.14	16.000	3.35	90.000
16	Zambia	0.000	/	0.000	/	0.000	/	66.750	3.77	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	66.750
17	Tanzania	0.000	/	0.000	/	0.000	/	42.680	3.50	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	42.680
18	Russia	0.000	/	0.000	/	0.000	/	32.960	3.74	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	32.960
19	Bolivia	0.000	/	16.000	2.16	0.000	/	16.500	3.50	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	32.500
20	Israel	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	32.000	3.45	0.000	/	32.000
21	The Democratic Republic of the Congo	0.000	/	0.110	5.15	0.000	/	22.000	3.41	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	22.110
22	Cambodia	0.000	/	15.440	2.72	0.000	/	4.080	3.13	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	19.520
23	Bangladesh	0.000	/	16.000	2.39	0.000	/	2.910	6.08	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	18.910
24	Zimbabwe	0.000	/	0.000	/	0.000	/	16.300	3.81	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	16.300
25	The Dominican Republic	0.000	/	0.000	/	0.000	/	7.700	2.99	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	7.700

26	Malawi	0.000	/	0.000	/	0.000	/	6.000	3.09	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	6.000
27	Angola	0.000	/	0.000	/	0.000	/	4.840	3.38	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	4.840
28	Myanmar	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	4.200	3.20	0.000	/	4.200
29	Nigeria	0.000	/	0.000	/	0.000	/	4.000	2.82	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	4.000
30	Moldova	0.000	/	0.000	/	1.500	4.31	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	1.500
31	Kenya	0.000	/	0.000	/	0.000	/	1.100	4.20	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	1.100
32	Honduras	0.000	/	0.000	/	0.000	/	0.474	4.43	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.474
Total		3.000	1.91	3,010.721	2.33	102.691	3.69	4,624.153	3.49	13.200	2.91	978.400	3.02	64.000	3.13	1,490.030	2.95	16.000	3.35	10,302.195

Note: Nuances in some data are mainly caused by rounding.
Source: China Customs & CCM

3.3.3 By exporter

Table 3.3.3-1 China's exports of acetochlor technical and formulations by exporter, 2021

No.	Exporter	20%WP		50% EC		70% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Hangzhou Nutrichem Co., Ltd.	0.000	/	0.000	/	0.000	/	875.162	2.83	0.000	/	0.000	/	0.000	/	0.000	/	875.162
2	Yangzhou Pioneer Chemical Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	745.202	3.28	0.000	/	0.000	/	745.202
3	Sharda Cropchem Limited	0.000	/	0.000	/	0.000	/	110.000	3.90	0.000	/	39.780	7.40	0.000	/	471.600	4.08	621.380
4	Shandong Binnong Technology Co., Ltd.	0.000	/	0.000	/	0.000	/	61.600	2.77	0.000	/	0.000	/	0.000	/	390.003	3.27	451.603
5	DAI Company Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	425.000	3.90	0.000	/	0.000	/	425.000
6	Eastchem Co., Ltd.	0.000	/	184.000	2.57	0.000	/	0.000	/	0.000	/	154.000	4.48	0.000	/	21.005	3.15	359.005
7	Norske Point Lp	0.000	/	0.000	/	0.000	/	334.400	4.48	0.000	/	0.000	/	0.000	/	0.000	/	334.400
8	Nutrichem Company Limited	0.000	/	0.000	/	0.000	/	330.000	3.63	0.000	/	0.000	/	0.000	/	0.000	/	330.000
9	Shandong Weifang Rainbow Chemical Co., Ltd.	0.000	/	0.000	/	0.000	/	131.492	3.13	0.000	/	8.000	3.57	0.000	/	64.000	3.35	203.492
10	Jiangsu Changlong Agrochemical Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	144.000	3.67	0.000	/	0.000	/	144.000
11	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	88.000	3.36	0.000	/	35.200	3.81	123.200
12	Limanox Investments Limited	0.000	/	0.000	/	0.000	/	123.200	3.41	0.000	/	0.000	/	0.000	/	0.000	/	123.200
13	Kronos Chemical Limited	0.000	/	0.000	/	0.000	/	116.600	3.33	0.000	/	0.000	/	0.000	/	0.000	/	116.600
14	Zhejiang Chemicals Import & Export Corporation	0.000	/	0.000	/	0.000	/	0.000	/	17.600	4.23	96.000	3.95	0.000	/	0.000	/	113.600
15	ASA Swiss AG	0.000	/	0.000	/	0.000	/	109.999	2.93	0.000	/	0.000	/	0.000	/	0.000	/	109.999
	Others	12.000	3.40	0.000	/	52.128	6.30	867.053	4.04	0.000	/	192.318	3.95	32.000	3.95	177.696	3.86	1,333.195
	Total	12.000	3.40	184.000	2.57	52.128	6.30	3,059.506	3.54	17.600	4.23	1,892.300	3.74	32.000	3.95	1,159.504	3.71	6,409.038

Note:

1. Nuances in some data are mainly caused by rounding.

2. The export data of acetochlor technical and formulations in 2021 are incomplete.

Source: China Customs & CCM

Table 3.3.3-2 China's exports of acetochlor technical and formulations by exporter, 2020

No.	Exporter	50% EC		90% EC		92% Tech.		93% Tech.		95% Tech.		97% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Hangzhou Nutrichem Co., Ltd.	0.000	/	1,627.123	2.80	0.000	/	72.000	2.79	0.000	/	0.000	/	1,699.123
2	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	138.000	2.05	0.000	/	16.000	3.85	427.470	2.82	35.200	2.76	0.000	/	616.670
3	Shandong Binnong Technology Co., Ltd.	21.000	2.45	21.960	2.82	0.000	/	0.000	/	450.400	2.82	0.000	/	493.360
4	Shandong Weifang Rainbow Chemical Co., Ltd.	48.240	2.28	78.812	2.99	0.000	/	0.000	/	359.000	2.77	0.000	/	486.052
5	DAI Company Ltd.	0.000	/	485.000	2.85	0.000	/	0.000	/	0.000	/	0.000	/	485.000
6	Eastchem Co., Ltd.	208.000	2.14	0.000	/	0.000	/	7.000	2.78	189.725	2.80	0.000	/	404.725
7	Nanjing Bodao Logistics Co., Ltd.	0.000	/	0.000	/	0.000	/	400.000	2.76	0.000	/	0.000	/	400.000
8	Yangzhou Pioneer Chemical Co., Ltd.	0.000	/	0.000	/	0.000	/	333.200	2.86	0.000	/	0.000	/	333.200
9	Jiangsu Changlong Agrochemical Co., Ltd.	102.880	1.98	0.000	/	0.000	/	160.000	2.87	0.000	/	0.000	/	262.880
10	Jiangsu Sinamyang International Group Co., Ltd.	160.000	2.03	0.000	/	0.000	/	16.000	2.84	0.000	/	0.000	/	176.000
11	Honbor Chemical Co., Ltd.	160.000	2.05	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	160.000
12	Shenzhen Iprochem Co., Ltd.	50.880	2.76	97.460	3.27	0.000	/	0.000	/	0.000	/	0.000	/	148.340
13	Nutrichem Company Limited	0.000	/	0.000	/	0.000	/	141.000	3.01	0.000	/	0.000	/	141.000
14	China Jiangsu International Economic and Technical Cooperation Group, Ltd.	0.000	/	65.120	3.03	0.000	/	12.000	2.91	0.000	/	36.000	3.05	113.120
15	Shanghai KJ Import and Export Co., Ltd.	0.000	/	105.600	3.09	0.000	/	0.000	/	0.000	/	0.000	/	105.600
	Others	67.826	2.64	748.495	3.30	64.000	2.78	224.800	2.75	96.460	2.91	40.800	2.71	1,242.381
	Total	956.826	2.16	3,229.570	2.96	80.000	2.99	1,793.470	2.82	1,130.785	2.81	76.800	2.87	7,267.451

Note:

1. Nuances in some data are mainly caused by rounding.

2. The export data of acetochlor technical and formulations in 2020 are incomplete.

Source: China Customs & CCM

Table 3.3.3-3 China's exports of acetochlor technical and formulations by exporter, 2019

No.	Exporter	20% WP		50% EC		81.5% EC		90% EC		92% Tech.		93% Tech.		94% Tech.		95% Tech.		97% Tech.		Total quantity, tonne
		Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	Quantity, tonne	Price, USD/kg	
1	Hangzhou Nutrichem Co., Ltd.	0.000	/	0.000	/	0.000	/	2,308.420	3.03	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	2,308.420
2	Shandong Binnong Technology Co., Ltd.	0.000	/	145.344	2.69	0.000	/	1,037.080	3.48	0.000	/	16.000	2.93	0.000	/	290.200	3.00	0.000	/	1,488.624
3	Shandong Weifang Rainbow Chemical Co., Ltd.	0.000	/	314.370	2.27	0.000	/	232.432	4.09	0.000	/	0.000	/	0.000	/	491.775	2.98	0.000	/	1,038.577
4	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	0.000	/	492.792	2.25	0.000	/	17.600	3.77	0.000	/	81.600	2.90	0.000	/	0.000	/	0.000	/	591.992
5	Jingjiang Sinamyang Import & Export Co., Ltd.	0.000	/	391.065	2.31	0.000	/	0.000	/	0.000	/	80.000	3.07	0.000	/	0.000	/	0.000	/	471.065
6	Eastchem Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	15.000	3.13	0.000	/	451.150	2.79	0.000	/	466.150
7	Suzhou Everfortune Imp. & Exp. Co., Ltd.	0.000	/	0.000	/	0.000	/	270.468	3.83	0.000	/	17.600	3.14	0.000	/	52.800	3.28	0.000	/	340.868
8	China Jiangsu International Economic Technical Cooperation Group Co., Ltd.	0.000	/	30.880	2.45	0.000	/	138.600	3.18	0.000	/	52.800	3.15	0.000	/	17.600	3.34	0.000	/	239.880
9	Shenzhen Honbor Industrial Co., Ltd.	0.000	/	200.720	2.28	0.000	/	0.000	/	0.000	/	16.000	3.00	0.000	/	16.000	3.00	0.000	/	232.720
10	Yangzhou Pioneer Chemical Co., Ltd.	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	224.400	3.00	0.000	/	0.000	/	0.000	/	224.400
11	Jiangsu Changlong Agrochemical Co., Ltd.	0.000	/	215.505	2.06	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	215.505
12	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.	0.000	/	199.680	2.12	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	199.680
13	Shandong Qiaochang Modern Agriculture Import & Export Co., Ltd.	0.000	/	55.296	2.21	0.000	/	37.758	4.48	0.000	/	0.000	/	0.000	/	42.180	2.85	0.000	/	135.234
14	Shanghai Haoyan International Trading Co., Ltd.	0.000	/	131.760	2.35	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	131.760
15	Shandong Kesai Eagrow Chemical Co., Ltd.	0.000	/	100.880	2.06	22.519	3.15	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	0.000	/	123.399
	Others	3.000	1.91	732.429	2.40	80.172	3.61	581.795	3.56	13.200	2.91	475.000	3.05	64.000	3.13	128.325	3.08	16.000	3.35	2,093.921
	Total	3.000	1.91	3,010.721	2.33	102.691	3.69	4,624.153	3.49	13.200	2.91	978.400	3.02	64.000	3.13	1,490.030	2.95	16.000	3.35	10,302.195

Note: Nuances in some data are mainly caused by rounding.
Source: China Customs & CCM

4 Consumption, 2019–2023E

Acetochlor can be used for pre-emergent control of annual weeds and some broadleaf weeds in the fields of corn, cotton, peanut, soybean, etc. In 2023, the apparent consumption (calculated by 100% AI, the same below) is estimated to be about 16,067 tonnes, down 0.65% year on year; the actual consumption of acetochlor technical will be about 16,243 tonnes.

During 2019–2023, the apparent consumption of acetochlor technical showed a general downward trend. Policies on cutting down unit consumption of pesticides should be the main reason. Since 2022, the Ministry of Agriculture and Rural Affairs of the People's Republic of China has been advocating the reduction of usage of chemical fertilizers and pesticides, as well as the improvement of application efficiency thereof. Statistics show that pesticide utilization rate on rice, wheat and corn in China averaged 41.80% in 2022, up about 1.2 percentage points compared with that in 2020.

Table 4-1 Apparent consumption of acetochlor technical in China, 2019–2023E

Year	Output (calculated by 92% technical), tonne	Output (calculated by 100% AI), tonne	Export (calculated by 100% AI), tonne	Apparent consumption (calculated by 100% AI), tonne
2019	26,900	24,748	8,218	16,530
2020	28,500	26,220	9,672	16,548
2021	26,700	24,564	8,200	16,364
2022	25,600	23,552	7,380	16,172
2023E	24,500	22,540	6,473	16,067

Note: The export volume in 2019–2023 is estimated according to the actual consumption, output and stock evaluation.

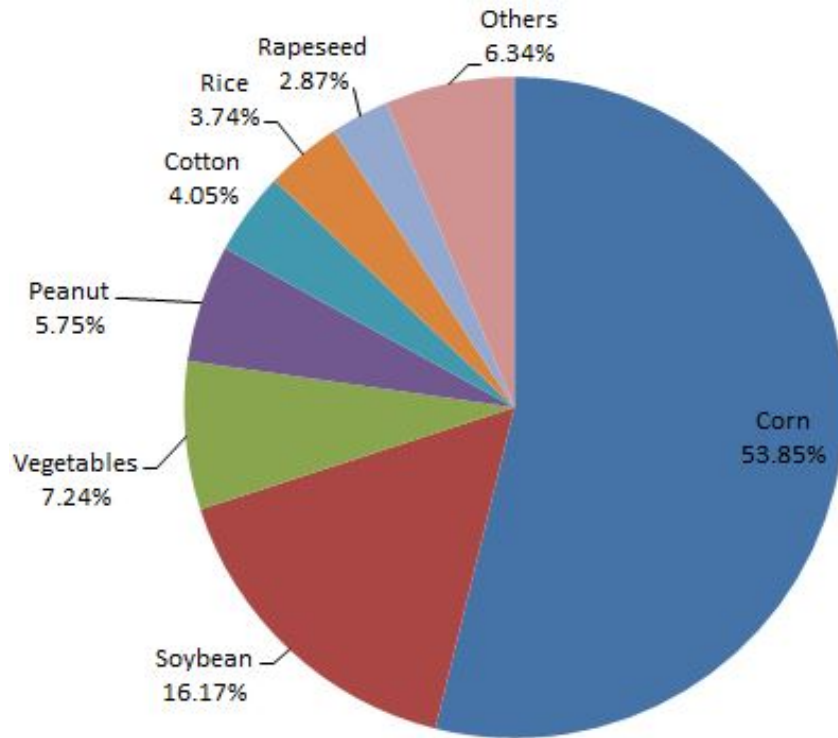
Source: China Customs & CCM

Table 4-2 Actual consumption of acetochlor in China by crop, 2023E

Crops	Consumption volume (calculated by 100% AI), tonne
Corn	8,747
Soybean	2,626
Vegetables	1,176
Peanut	933
Cotton	658
Rice	607
Rapeseed	466
Others	1,030
Total actual consumption, tonne	16,243

Source: CCM

Figure 4-1 Actual consumption share of acetochlor in China by crop, 2023E



Source: CCM

5 Outlook, 2024–2028

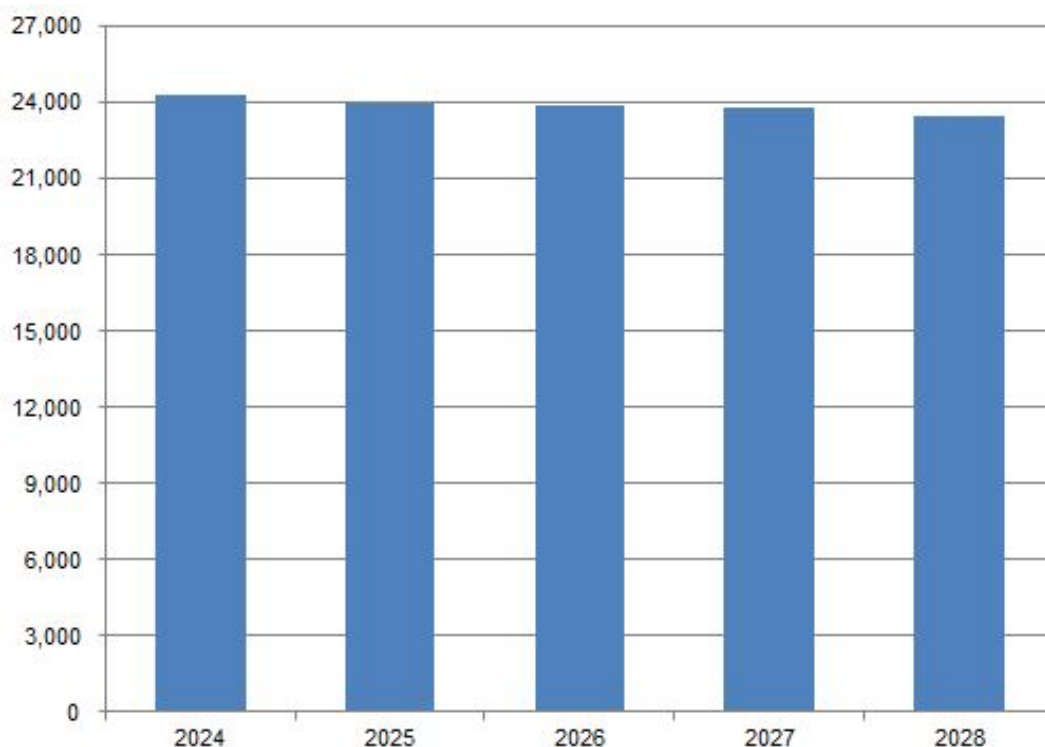
In 2023, the total capacity for acetochlor technical in China is 89,000 t/a, and the output is expected to be about 24,500 tonnes. From 2019 to 2023, the capacity in China has been on the decline in general, which could be attributed to the gradually shrinking domestic demand for acetochlor technical.

The output of acetochlor technical in China is estimated to go down in 2024–2028, mainly due to the decreasing domestic and overseas demand. Over recent years, some provinces have imposed strict requirements and restrictions on the construction of new production capacity for acetochlor. In May 2020, Jiangsu provincial government issued a catalogue of restrictions, elimination and prohibitions for the structural adjustment of the province's chemical industry, stipulating that the construction of new production plant for acetochlor (except for methylene method) is not allowed. On 24 Jan., 2022, the Shandong Provincial Department of Agriculture and Rural Affairs issued the *Notice on Further Strengthening the Management of Pesticide Production*, proposing that new production plant for acetochlor (except for methylene method) shall not be built.

Besides, the transfer of production plants for acetochlor (except for methylene method) to Henan Province has been prohibited in accordance with the *"Banned, Restricted, and Controlled" Catalogue for Chemical Industrial Transfers to Henan Province* issued by Henan Provincial Development and Reform Commission. It is unlikely to see an increase in the capacity for acetochlor technical in China in the next five years (2024–2028); the capacity may even go down further in the long run.

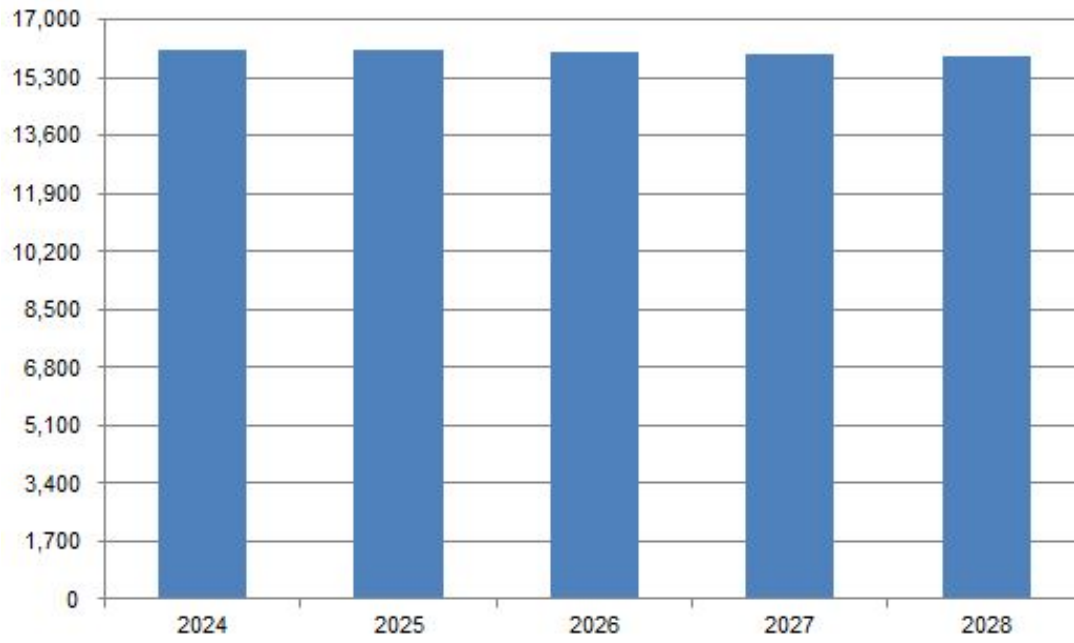
Additionally, domestic demand for acetochlor technical may also decrease in 2024–2028. That's mainly because cutting down on unit consumption of pesticides on crops has become the mainstream practice in China these years. Moreover, the competition from its substitutes, such as metolachlor technical and pyroxasulfone, is a concern. Therefore, it is estimated that the supply and demand of acetochlor technical in China will go down from 2024.

Figure 5-1 Supply (output) trend of acetochlor technical (calculated by 92% technical) in China, 2024–2028, tonne



Source: CCM

Figure 5-2 Demand trend of acetochlor in China, 2024–2028, tonne



Note: The volume is based on consumption volume calculated by 100% AI.
Source: CCM

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