

# Herbicides China Monthly Report 202308

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## Headline

In early Aug., the majority of herbicides TC had stable price in China. As to TC products experienced price changes, bensulfuron-methyl TC, pretilachlor TC, acetochlor TC and glufosinate-ammonium TC had their prices lowered, but glyphosate TC saw a fast price raise.

In late Aug., there was little improvement in market demand for herbicides; downstream buyers were inactive in purchasing. Compared with the late-July prices, prices of most herbicides TC remained stable, yet prices of bensulfuron-methyl TC, pretilachlor TC, acetochlor TC and glufosinate-ammonium TC experienced declines, while glyphosate TC price went up.

On 7 Aug., the EI report of Gansu Pingwen's 10,300 t/a pesticide TC and 9,000 t/a intermediate project was published on the website Gansu Environmental Assessment Information Network. The company plans to invest RMB990 million and build the project in three phases.

On 3 Aug., the EI report of Hebei Shanli's 21,000 t/a green agrochemical project was approved by local authorities.

On 18 Aug., Nantong Jiangshan announced that it would increase the capital of its subsidiary Yichang Jiangshan by RMB160 million. It also announced to invest RMB794.98 million in a novel green herbicide TC and formulation project, which will be undertaken by Yichang Jiangshan.

In Aug., the EI report of Hebei Nongbiwei's 33,100 t/a green pesticide TC and by-product project was released. Products of this project cover green pesticides TC and by-products like salts, hydrochloric acid and methanol.

In early Aug., MARA has given technical guiding opinions on seven prominent problems in current autumn grain cultivation and held technical training sessions, in order to deal with increasing extreme weather events in summer and accompanying frequent occurrences of pests and diseases, and thus to secure a bumper harvest.

On 15 Aug., 2023, the Department of Agrochemical Management of MARA released a batch of pesticide products approved of registration renewal, which include 409 herbicide products, of which 63 are TC products.

In early Aug., the FOB price of paraquat 42% TK in China edged up 3.64% MoM, and the ex-works price of pure pyridine in China went up by 2.78% MoM. Small increases in the prices of paraquat and pyridine are expected to continue in the short term.

In May–June 2023, China's herbicide formulations were mainly exported to Brazil, Thailand, Ghana, Indonesia, etc.; the export volume declined by some 24% YoY. However, import volume of herbicide formulations to China saw a huge YoY increase in this period. A great majority of these products were imported from Malaysia.







### Editor's note

In Aug., the majority of herbicides TC had a stable price, but some products saw slips in their prices. In general, there was little improvement in market demand though. Of the 13 main herbicides TC CCM investigated, bensulfuron-methyl TC, pretilachlor TC, acetochlor TC and glufosinate-ammonium TC experienced MoM price declines in early Aug., and most of them kept their prices steady in late Aug. An overall weak herbicide market continued.

Although there has been imbalance between supply and demand, new projects were still announced. The enterprises aim at maintaining or expanding their edge in the competition. Gansu Pingwen has planned a 10,300 t/a pesticide TC and 9,000 t/a intermediate project, Nantong Jiangshan has proposed a novel green herbicide TC and formulation project, Hebei Nongbiwei has planned a 33,100 t/a green pesticide TC and by-product project, and Hebei Shanli has the EI report of its 21,000 t/a green agrochemical project approved.

As to policy, MARA has given technical guiding opinions on seven prominent problems in current autumn grain cultivation and held technical training sessions in early Aug. The guiding opinions and training sessions are intended to deal with increasing extreme weather events in summer and accompanying frequent occurrences of pests and diseases, and thus to secure a bumper harvest.

The USD/CNY exchange rate in this newsletter is USD1.00 = CNY7.1283 on 1 Aug., 2023, sourced from the People's Bank of China. All the prices mentioned in this newsletter will include the VAT, unless otherwise specified.





## Market analysis

### Glyphosate TC price jumps, but overall herbicide market has little improvement in early Aug.

Summary: In early Aug., the majority of herbicides TC had stable price in China. As to TC products experienced price changes, bensulfuron-methyl TC, pretilachlor TC, acetochlor TC and glufosinate-ammonium TC had their prices lowered, but glyphosate TC saw a fast price raise.

In early Aug., many herbicides TC had stable price. Ex-works prices of some TC products went down slightly, such as amides pretilachlor TC and acetochlor TC. However, the price of glyphosate TC increased by some 30% MoM. In general, herbicide trading was slow because of sluggish downstream demand and inactive purchase.

Of the main herbicides TC CCM investigated, triazine herbicides and most sulfonylurea herbicides had stable price, except a 3.03% MoM decline in the price of bensulfuron-methyl TC. Among amide herbicides, although metolachlor TC kept a stable price, pretilachlor TC and acetochlor TC experienced slips in their prices, down 2.96% and 1.69% MoM, respectively. Downstream producers of pretilachlor TC and acetochlor TC mainly consumed their stock and made limited number of new orders.

For organophosphorus herbicides, the price of glufosinate-ammonium TC kept falling, down 3.40% MoM. Demand for glufosinate-ammonium TC was still dull, while inventories in the market were kept at a high level. Slow trading continued, as new orders came mainly to satisfy the rigid demand. In the contrast, the price of glyphosate TC jumped by some 30% MoM. Yet despite the quick increase, it should be noted that some traders started to downsize their inventories as overseas demand grew at a relatively slow pace. It is believed that the price of glyphosate TC will decrease in the near future.

Ex-works prices of florasulam TC, diuron TC and diquat TK remained steady in early Aug.





TABLE 1: Ex-works prices of main herbicides TC in early Aug. 2023

Category	Product	Content of active ingredient	Ex-works price in early Aug., RMB/t	USD/t	MoM change (based on RMB price)
Triazine herbicide	Atrazine TC	97%	36,000	5,050.29	Basically flat
	Ametryn TC	95%	44,500	6,242.72	Basically flat
Sulfonylurea herbicide	Nicosulfuron TC	95%	193,000	27,075.18	Basically flat
	Quizalofop-P-ethyl TC	95%	192,500	27,005.04	Basically flat
	Bensulfuron-methyl TC	96%	160,000	22,445.74	Down
Amide herbicide	Pretilachlor TC	95%	32,800	4,601.38	Down
	Acetochlor TC	92%	29,000	4,068.29	Down
	Metolachlor TC	97%	50,000	7,014.30	Basically flat
Organophosphorus herbicide	Glufosinate-ammonium TC	95%	62,500	8,767.87	Down
	Glyphosate TC	95%	35,800	5,022.24	Up
Triazolopyrimidine sulfonamide herbicide	Florasulam TC	98%	457,900	64,236.91	Basically flat
Bipyridinium herbicide	Diquat TK	40%	25,000	3,507.15	Basically flat
Substituted phenylurea herbicide	Diuron TC	97%	38,000	5,330.86	Basically flat

Source: CCM

### Herbicide prices basically stabilise under weak demand in late Aug.

Summary: In late Aug., there was little improvement in market demand for herbicides; downstream buyers were inactive in purchasing. Compared with the late-July prices, prices of most herbicides TC remained stable, yet prices of bensulfuron-methyl TC, pretilachlor TC, acetochlor TC and glufosinate-ammonium TC experienced declines, while glyphosate TC price went up.

In late Aug., the prices of acetochlor TC and glyphosate TC slipped from their early-Aug. prices. In general, there was little improvement in market demand for herbicides, and downstream buyers were inactive in purchasing. Of the 13 main herbicides TC CCM investigated, most products had steady price on a monthly basis. Glyphosate TC had MoM increase in its price, but bensulfuron-methyl TC, pretilachlor TC, acetochlor TC and glufosinate-ammonium TC experienced MoM price declines.





In late Aug., the prices of triazine herbicides atrazine TC and ametryn TC, triazolopyrimidine sulfonamide herbicide florasulam TC, substituted phenylurea herbicide diuron TC and bipyridinium herbicide diquat TK remained stable on a monthly basis. Most sulfonylurea herbicides also had stable price, except a 3.03% MoM decline in the price of bensulfuron-methyl TC.

Among amide herbicides, although metolachlor TC kept the price stable, pretilachlor TC and acetochlor TC saw dips in their prices, down 2.96% and 1.72% MoM, respectively. It is expected that such a weak price performance in amide herbicides would continue since it is an off-season for these products. Some producers operate at a low level, and thus the supply-demand relation would not change much.

As for organophosphorus herbicides, on a monthly basis, glufosinate-ammonium TC experienced another 1.57% price fall, while glyphosate TC enjoyed a 16.26% price increase. Inventories in glufosinate-ammonium TC producers were still quite large, and the glut forced the price going south. For glyphosate, despite the quick MoM price increase, its price actually went down during this month. Considering slowed orders from foreign trade companies due to the relatively high price, weak domestic sales and exports, and oversupply of glyphosate TC, the price of this product is projected to decrease slightly in the near future.







TABLE 2: Ex-works prices of main herbicides TC in late Aug. 2023

Category	Product	Content of active ingredient	Ex-works price in late Aug., RMB/t	USD/t	MoM change (based on RMB price)
Triazine herbicide	Atrazine TC	97%	36,000	5,050.29	Basically flat
	Ametryn TC	95%	44,500	6,242.72	Basically flat
Sulfonylurea herbicide	Nicosulfuron TC	95%	193,000	27,075.18	Basically flat
	Quizalofop-P-ethyl TC	95%	192,500	27,005.04	Basically flat
	Bensulfuron-methyl TC	96%	160,000	22,445.74	Down
Amide herbicide	Pretilachlor TC	95%	32,800	4,601.38	Down
	Acetochlor TC	92%	28,500	3,998.15	Down
	Metolachlor TC	97%	50,000	7,014.30	Basically flat
Organophosphorus herbicide	Glufosinate-ammonium TC	95%	62,500	8,767.87	Down
	Glyphosate TC	95%	33,600	4,713.61	Up
Triazolopyrimidine sulfonamide herbicide	Florasulam TC	98%	457,900	64,236.91	Basically flat
Bipyridinium herbicide	Diquat TK	40%	25,000	3,507.15	Basically flat
Substituted phenylurea herbicide	Diuron TC	97%	38,000	5,330.86	Basically flat

Source: CCM





## Company and supply

### Gansu Pingwen plans to build 10.3kt/a pesticide TC & 9kt/a intermediate project

Summary: On 7 Aug., the EI report of Gansu Pingwen's 10,300 t/a pesticide TC and 9,000 t/a intermediate project was published on the website Gansu Environmental Assessment Information Network. The company plans to invest RMB990 million and build the project in three phases.

On 7 Aug., the environmental impact (EI) report of Gansu Pingwen Chemical Co., Ltd. (Gansu Pingwen)'s 10,300 t/a pesticide TC and 9,000 t/a intermediate project was published on the website Gansu Environmental Assessment Information Network. The company plans to invest USD138.88 million (RMB990 million) and build the project in three phases in the Hexipu Circular Economy Chemical Industrial Park, Yongchang County, Jinchang City, Gansu Province. Total building area reaches 179,000 square metres. The company has obtained recordation certificate for the project issued by the authorities of Yongchang County.





TABLE 3: Products planned in Gansu Pingwen's pesticide TC and intermediate project

Project phase	Product	Capacity, t/a
Phase I	Flufenacet TC	600
	4-Fluoronitrobenzene	40
	Triclopyr-butotyl TC	5,000
	Triclopyr TC	300
	Pinoxaden TC	500
	Pinoxaden intermediates: (2-(3-chloro-6-ethyl-2-ethyl-4-methyl-1-cyclohexyl) malononitrile) and 2-(2,6-diethyl-4-methylphenyl)malonamide	460
Phase II	Norflurazon TC	300
	4,5-Dichloro-2-[3-(trifluoromethyl)phenyl]pyridazin-3-one	350
	Endothal TC	600
	Prodiamine intermediate: 2,4-dichloro-3,5-dinitrobenzotrifluoride or 3-chloro-2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)benzenamine	2,000
	2-[3-(Trifluoromethyl)phenyl]acetonitrile	500
	2,4-Dichloro-1-(trifluoromethyl)benzene	3,500
	Prothioconazole TC	500
	2-Chloro-1-(1-chlorocyclopropyl)-ethanone	50
Phase III	2,4-dichloro-3,5-dinitrobenzotrifluoride	2,000
	1,4-Dimethylnaphthalene TC	500
	Mepiquat chloride TC	1,000
	Prothioconazole TC	1,000
	2-Chloro-1-(1-chlorocyclopropyl)-ethanone	100

Source: EI report of the 10,300 t/a pesticide TC and 9,000 t/a intermediate project

Most of the pesticide TC products planned in the project are herbicides. One of the planned herbicides, flufenacet, is an aryloxyacetamide pesticide with high weed killing activity, low toxicity, broad-spectrum application on a wide range of crops, and good safety profile. In recent years, global sales of flufenacet products have grown at fast pace and the sales have already crossed the USD200 million





threshold. Before 2015, no flufenacet product was registered in China. And as of 14 Aug., 2023, five companies had acquired registration certificates for their flufenacet TC products, and nine companies had acquired registration certificates for their flufenacet SC products. Gansu Pingwen is not a member of the approved registrants, but it still plans to build a 600 t/a production line and all its flufenacet TC products are for sale. It can be seen that the promising prospect of flufenacet has been recognised by Chinese pesticide producers.

Gansu Pingwen, established in March 2023, is a subsidiary of Maxunitech Inc. (Maxunitech). The chemical park it is located in, Hexipu Circular Economy Chemical Industrial Park, has accommodated over 58 chemical enterprises. Pesticide enterprises like Maxunitech and Zhejiang Udragon Pesticides and Chemicals Co., Ltd. have invested and built up several pesticide TC and intermediate projects in this park. In the past two years, pesticide TC/intermediate projects invested by enterprises like Gansu Yaoqun Chemical Co., Ltd., Gansu Xinweike Fine Chemical Co., Ltd. and Gansu Antuo Chemical Technology Co., Ltd. also settled in the park. In 2022, the park attracted more than 20 large-scale chemical projects, and the total investment surpassed RMB10 billion. With policy support, as well as advantages of resources and industry foundations, Hexipu Circular Economy Chemical Industrial Park has great development potential. And by attracting more enterprises coming, its development space will be expanded.

### **Hebei Shanli to build capacity for glufosinate-ammonium & glufosinate-p formulations**

Summary: On 3 Aug., the EI report of Hebei Shanli's 21,000 t/a green agrochemical project was approved by local authorities.

On 3 Aug., the environmental impact (EI) report of Hebei Shanli Technology & Chemistry Co., Ltd. (Hebei Shanli)'s 21,000 t/a green agrochemical project was approved by local authorities. The company has planned to invest a total amount of USD91.19 million (RMB650 million) in this project, of which USD84,172 (RMB600,000) is for environmental protection. Planned products (all formulation products) and their capacity are: 140,000 t/a glufosinate-ammonium 200g/L AS, 6,000 t/a glufosinate-ammonium 10% AS, 3,000 t/a glufosinate-ammonium 15% AS, 1,000 t/a glufosinate-ammonium 30% AS, 5,000 t/a glufosinate-ammonium-fluoroglycofen-ethyl 20% ME, 1,500 t/a glufosinate-ammonium-fluoroglycofen-ethyl-quizalofop-p-ethyl 23% ME, 50,000 t/a glufosinate-p 10% SL, 3,000 t/a glufosinate-p 15% SL and 2,000 t/a glufosinate-p 20% SL.

These planned products are of high efficacy and good safety profile, and they are cost-effective and environment-friendly, which promises them with good sales prospect and great potentials. Moreover, the ban on paraquat in many countries has left a gap in the market, and broad-spectrum, low toxicity glufosinate-ammonium comes as a reliable alternative. In fact, glufosinate-ammonium products have already captured some market once enjoyed by paraquat products. The demand for glufosinate-ammonium has kept growing in recent years, its market share getting bigger. Currently, glufosinate-ammonium has the second largest sales performance among herbicides.

Hebei Shanli, established in May 2020, is a wholly-owned subsidiary of Hebei Lingang Chemical Co., Ltd. It is located in the Cangzhou Bohai New Area Lingang Economic-Technological Development Zone, Cangzhou City, Hebei Province. This time, the large-scale green agrochemical project plan shows Hebei Shanli's ambition to strengthen its market competitiveness, and better satisfy rising demand for glufosinate-ammonium products in the market with greater variety in its herbicide product mix.

Besides Hebei Shanli, some big players in China's pesticide industry have also made new moves concerning glufosinate-ammonium in





the past few years. For instance:

- Ningxia Wynca Technology Co., Ltd., a subsidiary of Zhejiang Wynca Chemical Industrial Group Co., Ltd., put its 3,000 t/a glufosinate-ammonium production lines into trial run in March 2022.
- Lier Chemical Co., Ltd., a leading company in glufosinate-ammonium business which takes up 30% share in glufosinate-ammonium TC market, has been actively expanding its capacity for glufosinate-ammonium products. It has a 30,000 t/a glufosinate-ammonium TC and AS project (with 20,000 t/a for glufosinate-ammonium TC) under construction.
- Jiangsu Changqing Agrochemical Co., Ltd. also revealed a 3,500 t/a glufosinate-ammonium project. Previously it planned to start construction in May or June 2022. However, the construction has not started yet due to continued lower glufosinate-ammonium price in the market.

### **Nantong Jiangshan to construct novel herbicide project**

Summary: On 18 Aug., Nantong Jiangshan announced that it would increase the capital of its subsidiary Yichang Jiangshan by RMB160 million. It also announced to invest RMB794.98 million in a novel green herbicide TC and formulation project, which will be undertaken by Yichang Jiangshan.

On 18 Aug., Nantong Jiangshan Agrochemical & Chemicals Co., Ltd. (Nantong Jiangshan) announced that it would invest USD111.52 million (RMB794.98 million) in a novel green herbicide TC and formulation project, which will be undertaken by its wholly-owned subsidiary Jiangshan (Yichang) Crop Technology Co., Ltd. (Yichang Jiangshan) and built in the Yaojiagang Chemical Park, Zhijiang City, Yichang City, Hubei Province. The project will construct 500 t/a benmicao-zuo (product code in Nantong Jiangshan: JS-T205) line, formulation lines and supporting facilities.

The same day, Nantong Jiangshan also announced that it would increase the capital of Yichang Jiangshan by USD22.45 million (RMB160 million), bring the subsidiary's total capital to USD35.07 million (RMB250 million). This move is intended for the industrialisation of new products like benmicao-zuo. After the increase, Yichang Jiangshan will remain a wholly-owned subsidiary of Nantong Jiangshan.

Benmicao-zuo is a novel uracil herbicide, with good activity on gramineous weeds and broadleaf weeds. It could be applied in concert with glyphosate, which can effectively deal with resistance to glyphosate, and lower use volume, reduce use cost and act at faster pace as well. Nantong Jiangshan has obtained the right to an exclusive licence concerning global patents for the product, and the patents are under protection until 15 Dec., 2034. Patents for benmicao-zuo TC have so far been granted in China, Argentina, Australia, Canada, the US and Brazil.

Nantong Jiangshan is a backbone enterprise with a long history in China's pesticide industry; it went public on the Shanghai Stock Exchange in 2001. Its benmicao-zuo project was launched in June 2022, when the company signed an investment agreement with the People's Government of Zhijiang City of Hubei Province. Nantong Jiangshan planned to acquire a piece of land in the Yaojiagang Chemical Park for the production and sale of novel green herbicides and intermediates. According to the agreement, the company would establish Yichang Jiangshan and the new subsidiary would be in charge of project construction and production equipment operation. Total investment for the novel green herbicide and intermediate project was planned at USD280.57 million (RMB2,000 million), of which USD224.46 million (RMB1,600 million) was for fixed-asset investment. It is projected that full operation the project would generate annual





output value of USD420.86 million (RMB3,000 million).

Nantong Jiangshan believes the benmicao-zuo project will promote the upgrading of its product structure. The high-efficacy, low-toxicity and low-residue benmicao-zuo will become a good substitute for low-efficacy, high-toxicity and high-residue pesticides, and such a substitution trend is in tune with the requirements put forward in the 14th Five-Year Plan for the Development of Pesticide Industry and the Action Plan for Reduction of Chemical Pesticides by 2025.

### **Hebei Nongbiwei plans to build 33.1kt/a green pesticide TC & by-product project**

Summary: In Aug., the EI report of Hebei Nongbiwei's 33,100 t/a green pesticide TC and by-product project was released. Products of this project cover green pesticides TC and by-products like salts, hydrochloric acid and methanol.

In Aug., the environmental impact (EI) report of Hebei Nongbiwei Biotechnology Co., Ltd. (Hebei Nongbiwei)'s large-scale green pesticide TC and by-product project was published. The company has planned to invest USD509.52 million (RMB3,632 million) to construct the project in the eastern part of Cangzhou Lingang Economic and Technological Development Zone, Cangzhou City, Hebei Province. Once completed, the company will have production capacity of 5,400 t/a tebuthiuron, 1,800 t/a imazapyr, 6,300 t/a clethodim (including TK), 3,000 t/a mesotrione, 2,000 t/a nicosulfuron, 1,000 t/a quizalofop-p-ethyl, 2,400 t/a niclosamide, 1,200 t/a fenclorim, 10,000 t/a glufosinate-ammonium, and also capacity for some by-products like salts, hydrochloric acid and methanol. Hebei Nongbiwei was established in Dec. 2021., and its business scope covers the manufacture of chemical pesticides.

Much information of this project has been kept confidential and the EI report reveals very little concerning detailed product plan and production equipment. Of the nine pesticides planned, except niclosamide, eight are herbicides. Hebei Nongbiwei believes this project will boost its profitability and competitiveness in the market, and have positive effects on its business performance in the future. In addition, the planned products are high-efficacy, low-toxicity and environment-friendly pesticides. Developing production capacity for such products is in tune with the requirements put forward in national policies such as the 14th Five-Year Plan for the Development of Pesticide Industry and the Action Plan for Reduction of Chemical Pesticides by 2025. It will also facilitate improvement of the company's product mix.

Specifically, Hebei Nongbiwei has planned to build three clethodim production lines. Clethodim is a low-toxicity post-emergence herbicide. It is used in the control of annual and perennial gramineous weeds. The product can be used in concert with glyphosate, which can effectively deal with resistance to glyphosate, and lower use volume, reduce use cost, act at faster pace as well. In recent years, market size of clethodim has grown continuously, encouraged by expanding demand.

In the past few years, quite a number of domestic enterprises actively proposed and launched their clethodim projects. In 2023, there have come several pieces of news concerning large-scale clethodim projects so far, including:

- On 25 April, Shandong Cynda Chemical Co., Ltd. announced to build 5,000 t/a clethodim technical project, to strengthen the company's advantage in production capacity and product competitiveness in this market. The company has long before regarded clethodim as one of its main products.
- In Aug., the EI report of Hebei Lansheng Biotech Co., Ltd.'s pesticide expansion project was approved by local government. The company has planned to expand its clethodim capacity from the 4,000 t/a to 12,000 t/a with upgraded production technology.





- Also in Aug., Inner Mongolia Miraculous Crop Science Co., Ltd., a subsidiary of Lianyungang Liben Crop Technology Co., Ltd., obtained recordation certificate for its 30,000 t/a clethodim project.





## Policy

### MARA introduces technical guiding measures for autumn grain cultivation problems

Summary: In early Aug., MARA has given technical guiding opinions on seven prominent problems in current autumn grain cultivation and held technical training sessions, in order to deal with increasing extreme weather events in summer and accompanying frequent occurrences of pests and diseases, and thus to secure a bumper harvest.

To deal with increasing extreme weather events in summer and accompanying relatively heavy occurrences of pests and diseases, in early Aug., the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) worked out seven technical guiding opinions specifically for the cultivation of autumn grain crops—mainly rice, maize, soybean and wheat, and organised nation-wide technical training sessions and touring guidance. All the efforts are meant for securing a bumper harvest of autumn grains.

August is of critical importance for autumn grain cultivation; it is a key period for flood control and drought relief. Recently, China has experienced relatively larger amount of precipitation and thus increasing risks of flood and waterlogging damages, which poses great challenges to safe agricultural production. Considering the complicated and grim weather conditions and occurrence trend of pests and diseases, MARA has regarded natural disaster prevention & mitigation and a good harvest of autumn grains as the overwhelming tasks in the field concerning agriculture, rural areas and farmers, and pushed ahead with the work with strong will. It has also launched 100-day campaign to fight bravely for a good harvest. Targeting problems such as inadequate implementation of disaster prevention & mitigation measures, small room for improving per-unit yield, ineffective field management technical measures, MARA has dispatched multiple working groups to the frontline in 27 provinces that produce autumn grains to offer guidance to solve the problems.

In China, the cultivation of four main autumn grain crops—rice, maize, soybean and wheat, now faces seven prominent problems:

- The growth of soybean is slow and the stalks are soft in some areas.
- At middle-to-late growth stage, maize crops might show nutrient deficiency symptoms.
- Prevention and control work of the two major migratory pests on rice—rice leaf roller and rice planthopper is under great pressure.
- *Spodoptera frugiperda*, which attacks maize crops, is still moving north.
- There is relatively heavy occurrence of pests & diseases on soybean.
- Damages caused by pests & diseases, weeds and pesticides are scattered in maize-soybean strip intercropping areas.
- Some plant protection UAVs cannot deliver up-to-standard fertiliser spraying.

To tackle with these problems, the Department of Planting Management of MARA and the National Agro-Tech Extension and Service Centre (NATESC) have jointly worked out seven technical guiding opinions, organised three special training sessions and carried out two to three times regional grass-root level guidance on key tasks including disaster prevention & mitigation, yield improvement, field management and scientific control of pests & diseases. And with all these measures taken, there are better chances to win a bumper harvest of autumn grains.







## Registration

### 63 Herbicide TC products approved of registration renewal in Aug.

Summary: On 15 Aug., 2023, the Department of Agrochemical Management of MARA released a batch of pesticide products approved of registration renewal, which include 409 herbicide products, of which 63 are TC products.

On 15 Aug., 2023, the Department of Agrochemical Management of the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) released a batch of pesticide products approved of registration renewal, which include 409 herbicide products. The great majority of these herbicides are of low toxicity, and popular forms are EC, WP, TC and AS. Of the 63 herbicide TC products approved of registration renewal, the most popular product type is 95% glyphosate TC, with nine products in total.

Altogether 19 companies have at least five herbicide products approved of registration renewal, and Shandong Vicome Greenland Chemical Co., Ltd. ranked first with 14 products. It should be noted that eight herbicide products of this batch are export-only products. Five of these export-only products are registered by Jiangsu Rotam Chemistry Co., Ltd.—a metsulfuron-methyl 60% WG, a metsulfuron-methyl·thifensulfuron-methyl 75% WG, a metsulfuron-methyl 20% WG, a metsulfuron-methyl·tribenuron-methyl 50% WG and a metsulfuron-methyl 20% SG.

**TABLE 4:** Herbicide products approved of registration renewal by toxicity released on 15 Aug., 2023

No.	Toxicity	Number
1	Low	386
2	Mild	21
3	Moderate	2
<b>Total</b>		<b>409</b>

Source: Department of Agrochemical Management of MARA



**TABLE 5:** Herbicide products approved of registration renewal by form released on 15 Aug., 2023

No.	Form	Number
1	EC	127
2	WP	86
3	TC	63
4	AS	59
5	WG	16
6	SC	13
7	SE	11
8	SP	9
9	OD	7
10	EW	6
11	SL	3
12	GR	3
13	SG	2
14	DF	1
15	TKL	1
16	TK	1
17	ME	1
<b>Total</b>		<b>409</b>

Source: Department of Agrochemical Management of MARA

**TABLE 6:** Major active ingredients of herbicide products approved of registration renewal released on 15 Aug., 2023

No.	Active ingredient	Number
1	Glyphosate	40
2	Acetochlor	40
3	Bensulfuron-methyl	35
4	Atrazine	27
5	Butachlor	26
6	Tribenuron-methyl	23
7	Quizalofop-P-ethyl	21
8	Quinclorac	15
9	Fomesafen	14
10	Glyphosate-isopropylammonium	12
11	Haloxifop-P-methyl	12
12	Pyrazosulfuron-ethyl	11
13	Propisochlor	11

Source: Department of Agrochemical Management of MARA

**TABLE 7:** Registrants with at least five herbicide products approved of registration renewal released on 15 Aug., 2023

No.	Registrant	Number
1	Shandong Vicome Greenland Chemical Co., Ltd.	14
2	Jiangxi Heyi Chemical Co., Ltd.	12
3	Jilin Bada Pesticide Co., Ltd.	11
4	Nantong Jinling Agrochemical Co., Ltd.	11
5	Hangzhou Nutrichem Co., Ltd.	10
6	Jiangsu Kuaida Agrochemical Co., Ltd.	10
7	Heilongjiang Jixiang Agrochemical Co., Ltd.	9
8	Qiaochang Modern Agriculture Co., Ltd.	9
9	Shandong Binnong Technology Co., Ltd.	9
10	Xianglin Mefront Biotechnology Co., Ltd.	9
11	Zhejiang Wynca Chemical Industrial Group Co., Ltd.	9
12	Anhui Huaxing Chemical Industry Co., Ltd.	8
13	Jinan Tianbang Chemical Co., Ltd.	8
14	Jiamusi Kaile Pesticide Co., Ltd.	6
15	Jiangsu Rotam Chemistry Co., Ltd.	6
16	Jiangsu Institute of Ecomones Co., Ltd.	6
17	Harbin Fuli Biochemical Technology Development Co., Ltd.	5
18	Jilin Jinqiu Pesticide Co., Ltd.	5
19	Jiangsu Tenglong Biological & Medicinal Co., Ltd.	5

Source: Department of Agrochemical Management of MARA



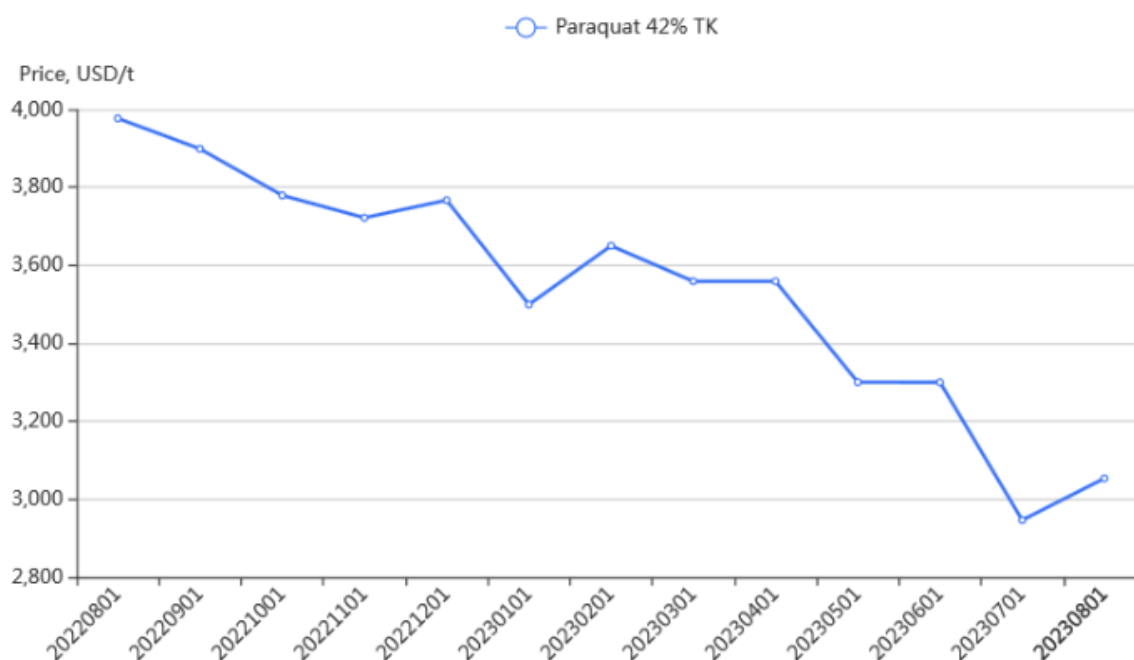
## Paraquat and pyridine

### Recovering paraquat market prompts increase in pyridine price in early Aug.

Summary: In early Aug., the FOB price of paraquat 42% TK in China edged up 3.64% MoM, and the ex-works price of pure pyridine in China went up by 2.78% MoM. Small increases in the prices of paraquat and pyridine are expected to continue in the short term.

CCM's price monitoring data show that the FOB price of paraquat 42% TK in China edged up 3.64% MoM to USD3,054/t in early Aug.; on a yearly basis, the price still registered a 23.21% decrease. The ex-works price of pure pyridine recovered to USD2,595/t (RMB18,500/t), up 2.78% MoM, which is 48.61% lower than the price in Aug. 2022 though. As paraquat market improved with overseas orders coming continuously, the price of pyridine increased. It is estimated that small increases in the prices of paraquat and pyridine will continue in the near future.

FIGURE 1: FOB price of paraquat 42% TK in China, Aug. 2022–Aug. 2023



Note: The monthly prices here are the prices recorded early each month.

Source: CCM





FIGURE 2: Ex-works price of pure pyridine in China, Aug. 2022–Aug. 2023



Note: The monthly prices here are the prices recorded early each month.  
Source: CCM





## Trade analysis

## China's herbicide formulation exports in May–June have YoY decrease

Summary: In May–June 2023, China's herbicide formulations were mainly exported to Brazil, Thailand, Ghana, Indonesia, etc.; the export volume declined by some 24% YoY. However, import volume of herbicide formulations to China saw a huge YoY increase in this period. A great majority of these products were imported from Malaysia.

According to statistics from General Administration of Customs of China (China Customs), in May–June 2023, China exported 240,473.08 tonnes (actual volume, the same hereafter) of herbicide formulation products with a total export value of USD688.80 million. Major export destinations were Brazil, Thailand, Ghana, Indonesia, etc. Compared with the export volume achieved in May–June 2022, this year's figure contracted 24.38%, or a reduction of some 77,534 tonnes. As regards imports, in the same period, China imported 1,879.22 tonnes of herbicide formulation products with a value totalling USD12.83 million. The import volume soared 171.04% YoY. A great majority of these products were imported from Malaysia.

In terms of export, average export price during May–June 2023 plunged by 44.47% YoY to USD2.86/kg, mainly affected by weak market demand and big inventories. Glufosinate-ammonium and glyphosate, main organophosphorus herbicides in the market, have experienced bigger downward price swing than last year. Price falls of the two products brought down the overall herbicide export price. China's herbicide formulations were exported to at least 121 countries and regions in the two months. The export to Brazil, the largest destination, plummeted 45.10% YoY to 48,684 tonnes from 88,680 tonnes.

In terms of import, import price of herbicide formulations averaged at USD6.83/kg during May–June 2023, up 12.52% YoY. Over 78% of the herbicide formulation imports came from Malaysia; the volume from this origin country surged 141.13% YoY.

**TABLE 8:** May and June exports of herbicide formulations from China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
May	112,805,351	3.07	153,197,350	5.28
June	127,667,733	2.67	164,809,597	5.03
<b>Total</b>	<b>240,473,084</b>	<b>2.86</b>	<b>318,006,947</b>	<b>5.15</b>

Note:1. The data were updated to 23 Aug., 2023.

2. All the data here are calculated by actual volume.

Source:China Customs



**TABLE 9:** Top 10 destinations of herbicide formulations exported from China, May–June 2023 vs May–June 2022

No.	May–June 2023			May–June 2022		
	Destination	Volume, tonne	Share	Destination	Volume, tonne	Share
1	Brazil	48,684	20.25%	Brazil	88,680	27.89%
2	Thailand	21,581	8.97%	Thailand	26,635	8.38%
3	Ghana	16,422	6.83%	Nigeria	15,495	4.87%
4	Indonesia	10,322	4.29%	Ghana	13,670	4.30%
5	Cambodia	9,292	3.86%	Cambodia	12,678	3.99%
6	Nigeria	8,279	3.44%	Australia	12,059	3.79%
7	Australia	7,555	3.14%	Indonesia	11,433	3.60%
8	Paraguay	7,399	3.08%	Argentina	10,958	3.45%
9	Myanmar	5,396	2.24%	Vietnam	7,890	2.48%
10	Cote d'Ivoire	4,751	1.98%	The US	7,509	2.36%

Note:1. The data were updated to 23 Aug., 2023.

2. All the data here are calculated by actual volume.

Source:China Customs

**TABLE 10:** May and June imports of herbicide formulations to China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
May	1,565,461	6.56	664,396	5.03
June	313,758	8.17	28,943	29.99
<b>Total</b>	<b>1,879,219</b>	<b>6.83</b>	<b>693,339</b>	<b>6.07</b>

Note:1. The data were updated to 23 Aug., 2023.

2. All the data here are calculated by actual volume.

Source:China Customs





**TABLE 11:** Major origins of herbicide formulations imported to China, May–June 2023 vs May–June 2022

No.	May–June 2023			May–June 2022		
	Origin	Volume, tonne	Share	Origin	Volume, tonne	Share
1	Malaysia	1,474	78.43%	Malaysia	611	88.16%
2	India	106	5.63%	Indonesia	42	6.01%
3	The US	95	5.07%	The US	20	2.91%
4	Hungary	77	4.11%	Germany	11	1.53%
5	Indonesia	40	2.15%	Japan	10	1.39%
6	Germany	39	2.09%	/	/	/
7	Australia	38	2.03%	/	/	/
8	Japan	9	0.48%	/	/	/

Note:1. The data were updated to 23 Aug., 2023.

2. All the data here are calculated by actual volume.

3. Due to rounding, the total may not equal 100.00%.

Source:China Customs



## Brief news

**Shaanxi unveils second batch of approved chemical parks**

In late July, the Industry and Information Technology Department of Shaanxi Province revealed the second batch of approved chemical parks in the province, with eight chemical parks from four cities on the list.

**TABLE 12:** Second-batch list of approved chemical parks in Shaanxi Province

No.	Chemical park	Location
1	Guapo Fine Chemical Industry Park of Weinan Huazhou Industrial Park	Huazhou District, Weinan City
2	Wuqi Industrial Park Energy and Chemical Industry Park	Wuqi County, Yan'an City
3	Huangling Industry and Economy Industrial Park Chemical Industry Area	Huangling County, Yan'an City
4	Dingbian New Industrial Zone Chemical Industry Area	Dingbian County, Yulin City
5	Fugu High-Tech Industrial Development Zone Chemical Industry Zone	Fugu County, Yulin City
6	Yujia Industrial Park Chemical Industrial Park	Jiaxian County, Yulin City
7	Yuheng Industrial Zone Northern Area (Yuyang Xihongdun Industrial Zone)	Yuyang District, Yulin City
8	Shangluo Chemical Industry Park of Shangdan Circular Industrial Economic Park	Shangzhou District, Shangluo City

Source: Industry and Information Technology Department of Shaanxi Province

**Hebei Lansheng to expand clethodim capacity and build sethoxydim lines**

On 7 Aug., the Jinzhou Municipal People's Government announced on its website that the environmental impact report of the 25,005 t/a high-efficacy and low-toxicity pesticide expansion project of Hebei Lansheng Biotech Co., Ltd. (Hebei Lansheng) was to be approved by local authorities.

**Project overview**

- Investment: USD3.51 million (RMB25 million), including USD0.28 million (RMB2 million) for environmental protection;
- Location: Hebei Lansheng's existing plant in the Jinzhou Economic Development Zone Mayu Industrial Park, Jinzhou City, Hebei Province;
- Construction content:
  - Expanding the capacity for clethodim to 12,000 t/a from the existing 4,000 t/a, that for boscalid to 2,000 t/a from 500 t/a, and that for brassinolide to 5 t/a from 1 t/a. These expansions will be achieved through modifications to current production technologies;
  - Constructing new production lines of 1,000 t/a sethoxydim and 10,000 t/a SL products of a series of brassinolides.

**Anhui Neotec to put 500 t/a topramezone lines into trial production this Oct.**



In early Aug., it was known that Anhui Neotec Co., Ltd. (Anhui Neotec), a holding subsidiary of Jiangsu Flag Chemical Industry Co., Ltd., would soon complete the equipment installation of the 500 t/a topramezone production lines and the company planned to put the lines into trial production by Oct.

Founded in July 2020, Anhui Neotec has launched the construction in the Anhui Huaibei New Coal Chemical Synthetic Materials Base, Huaibei City, Anhui Province, of the project of 15,500 t/a novel pesticide TCs and related products. The 500 t/a topramezone lines are part of the project.

Topramezone, the first benzoylpyrazolone herbicide, is the fourth largest 4-hydroxyphenylpyruvate dioxygenase (HPPD) inhibiting herbicide. Annual global sales of topramezone products exceed USD100 million.

### **Syngenta Kunshan base obtains carbon neutrality certificate**

In Aug, Syngenta (Suzhou) Crop Protection Co., Ltd. (also referred to as Syngenta Kunshan base) was granted a carbon neutrality certificate by the China Beijing Green Exchange. Syngenta Kunshan base is Syngenta Group Co., Ltd. (Syngenta)'s first "zero carbon" factory built in China. "Zero carbon" factory refers to a production facility that achieve net zero carbon emissions through adopting energy conservation and carbon emission reduction technologies in production processes, and measures like carbon credits to offset its carbon footprint. By establishing such a factory, Syngenta, which is committed to conserving energies and cutting down emissions in production process through technology innovation and industrial upgrading, has made its contribution to transformation and sustainable development of China's agricultural industry.

Syngenta Kunshan base, guided by green ideas and following the ideas in every production and management process, takes the lead in low-carbon transformation of agricultural industry chain and supply chain, and promotes the realisation of sustainable development of agricultural industry. It achieves energy conservation and carbon emission reduction via methods including refined control of production equipment and reduction of energy consumption in everyday operation. In 2022, the Kunshan base increased its production value by 17% YoY, and meanwhile slashed energy consumption per unit output value and carbon dioxide emission intensity by some 11%.

### **Canada proposes to approve registration of diflufenican & 3 diflufenican-containing products**

On 3 Aug., Health Canada released the consultant document PRD2023-07. The Pest Management Regulatory Agency, under the authority of the Pest Control Products Act, proposed registration for the sale and use of diflufenican TC and three diflufenican-containing products—SC500 (diflufenican formulation), SC600 (mixed formulation of diflufenican and metribuzin) and SC617 (mixed formulation of diflufenican and isoxaflutole).

Diflufenican, a selective, contact and residual herbicide, is used in the control of annual gramineous weeds and some broadleaf weeds in maize fields, soybean fields and wheat fields.

### **Haohua Technology to acquire 100% Sinochem Lantian**





On 14 Aug., Haohua Chemical Science & Technology Corp., Ltd. (Haohua Technology) released the Issuing Shares to Purchase Assets and Raising Supporting Funds as well as Connected Transaction Report (Draft). Haohua Technology plans to issue shares to Sinochem Group Co., Ltd. and Sinochem Asset Management Co., Ltd. to acquire the 52.81% and 47.19% equity they hold respectively in Sinochem Lantian Co., Ltd. (Sinochem Lantian). The transaction value hits USD1.02 billion (RMB7.24 billion).

Haohua Technology also plans to raise funds no more than the transaction value and invest the funds into multiple fluorine chemical projects planned by Sinochem Lantian. One of these projects is the 3,000 t/a trifluoromethylpyridine project in the subsidiary Shaanxi Sinochem Lantian Chemical Technology New Material Co., Ltd. Haohua Technology would invest USD37.18 million (RMB265 million) in this project; according to the Report, the investment accounts for 3.66% of the total funds to be raised.

Publicly available data show that annual demand for trifluoromethylpyridine is about 10,000 tonnes in China, and the supply of the product is relatively tight. Main application fields are pharmaceutical industry, pesticide industry, coating industry, etc. In pesticide industry, trifluoromethylpyridine is used in the production of chlorfluazuron, fluazinam, fluopyram, fluopimomide, fluopicolide, etc. In China, only a few companies can commercially produce trifluoromethylpyridine, since the production process is complex. Some industry insiders believe the potential capacity in Haohua Technology may reshape the market landscape.

### **Limin Group has mature commercial production technology for tembotrione**

On 16 Aug., Limin Group Co., Ltd. (Limin Group) announced that the company has mastered the technology for commercial production of tembotrione after years of R&D efforts. Its wholly-owned subsidiary Limin Chemical Co., Ltd. (Limin Chemical) has obtained a registration certificate for a 97% tembotrione TC product; so far only five enterprises have been approved of registration for this product in China. On 20 June, Limin Chemical's new crop protection products technology transformation project passed the expert review, construction content including production lines of 500 t/a tembotrione TC, 1,100 t/a difenoconazole TC and 3,000 t/a zineb TC.

Tembotrione, developed by Bayer AG, is a triketone herbicide and an HPPD inhibitor. It entered the Austrian market in 2007. Thanks to a broad weeding spectrum, strong systemic effect and high safety, tembotrione is mainly used in the control of gramineous weeds like common crabgrass and green bristlegrass, and broadleaf weeds like *Amaranthus tricolor*, lambsquarters, leaf mustard, morning glory and nettle in maize fields. It can also be used on sunflower, sugarcane and non-crop plants.

### **BSM reports net profit growth in H1 2023**

In mid-Aug., BSM Chemical Co., Ltd. (BSM), a leading enterprise in pendimethalin business, revealed its semi-annual report for H1 2023. During the reporting period, the company's net profit attributable to equity holders of the listed company reached USD11.02 million (RMB78.56 million), up 5.10% YoY, with the net profit attributable to equity holders of the listed company after deducting extraordinary profit and loss hitting USD10.53 million (RMB75.04 million), up 4.89% YoY. Meanwhile, gross profit margin of its main business reached 40.36%, up 3.83 percentage points YoY.

BSM's main products are pendimethalin TC and formulation products, and pesticide intermediates. The revenue from pendimethalin TC business in H1 2023 was USD43.21 million (RMB308.01 million), which accounts for 84.82% of its total revenue of USD50.94 million





(RMB363.12 million).

By the end of the reporting period, main body for the 8,500 t/a pentanone series green new material project in its subsidiary Tongling BSM Technology Co., Ltd. had been built up. Once the lines are put into operation, the cost of pendimethalin production in BSM will be reduced, the company's competitiveness strengthened and new sources of profits fostered. Moreover, BSM has been actively expanding its business layout. Starting from the pentanone series, the company will extend its industrial chain to C5 new material industry. In H1 2023, the company's R&D investment stood at USD2.75 million (RMB19.60 million), increasing by 6.78% YoY.

### **Inner Mongolia Miraculous plans a 30,000 t/a clethodim project**

In Aug., the recordation certificate of Inner Mongolia Miraculous Crop Science Co., Ltd. (Inner Mongolia Miraculous)'s 30,000 t/a clethodim project was publicised. With investment totalling USD70.18 million (RMB500.29 million), the project will be constructed in the Bayin Aobao (Bayan Ovoo) Industrial Park, Alxa High-Tech Industrial Development Zone, Alxa League, Inner Mongolia Autonomous Region. Inner Mongolia Miraculous is a subsidiary of Lianyungang Liben Crop Science Co., Ltd.

Clethodim, a cyclohexanedione herbicide, can be applied in growing fields of broadleaf crops including rape, cotton and peanut, to control gramineous weeds such as wild oat, common crabgrass, green bristlegrass and goosegrass. In recent years, growing resistance in gramineous weeds to glyphosate in soybean fields has brought opportunities for clethodim, and thus its application range has been widened.

### **Jiangxi Meijing plans to build 500 t/a flumioxazin capacity**

In early Aug., the Safety Condition Evaluation Report of Jiangxi Meijing Technology Co., Ltd. (Jiangxi Meijing)'s 2,750 t/a chemical project was publicised.

#### **Project overview**

- Construction content: Production lines of 600 t/a lipoic acid, 500t/a flumioxazin, 1,500 t/a ethylene sulphate and 150 t/a etodolac methyl ester;
- Total investment: USD5.33 million (RMB38 million);
- Location: Fengchao Industrial Park, Wannian County, Shangrao City, Jiangxi Province.

Flumioxazin, an herbicide absorbed through bud and leaves, will easily degrade and is safe to succeeding crops. It has effective control over annual broadleaf weeds and some gramineous weeds. Peanut and soybean have exhibited good tolerance to flumioxazin; maize, wheat, barley and paddy rice have shown moderate tolerance. With low toxicity to people and livestock, flumioxazin enjoys promising sales prospect.





## Price update

## Ex-works prices of key herbicide raw materials in China, 8 August, 2023

TABLE 13: Ex-works prices of key herbicide raw materials in China, 8 August, 2023

Raw Materials	20230708		20230808	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	11,250	1,559.1	11,650	1,634.33
92% Iminodiacetonitrile	8,600	1,191.85	8,600	1,206.46
99% Isopropylamine	9,550	1,323.5	9,550	1,339.73
98% N-(Phosphonmethyl) Iminodiacetic acid	16,000	2,217.39	19,700	2,763.63
99% Phosphorus trichloride	5,770	799.65	6,410	899.23
99.9% Pyridine	18,000	2,494.56	18,500	2,595.29

Note: Ex-works price includes VAT.

Source: CCM

## Ex-works prices of main herbicides in China, 8 August, 2023





TABLE 14: Ex-works prices of main herbicides in China, 8 August, 2023

Product	20230708		20230808	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	13,200	1,829.34	13,188	1,850.09
92% Acetochlor technical	29,500	4,088.31	29,000	4,068.29
97% Atrazine technical	36,000	4,989.12	36,000	5,050.29
96% Bensulfuron-methyl technical	165,000	22,866.8	160,000	22,445.74
92% Butachlor technical	22,000	3,048.91	22,000	3,086.29
95% Clomazone technical	104,000	14,413.02	104,000	14,589.73
95% Cyhalofop-butyl technical	129,000	17,877.68	129,000	18,096.88
97% Diuron technical	38,000	5,266.29	38,000	5,330.86
98% Fenclorim technical	108,000	14,967.36	105,000	14,730.02
95% Fenoxaprop-P-ethyl technical	157,000	21,758.11	154,000	21,604.03
96% Fluroxypyr technical	125,000	17,323.34	108,000	15,150.88
95% Fomesafen technical	133,900	18,556.76	133,900	18,784.28
95% Glufosinate ammonium technical	64,700	8,966.56	62,500	8,767.87
95% Glyphosate technical	27,500	3,811.13	35,800	5,022.24
95% Haloxyfop-P-methyl technical	143,000	19,817.9	139,000	19,499.74
97% Metolachlor technical	50,000	6,929.33	50,000	7,014.3
95% Metsulfuron-methyl technical	135,000	18,709.2	135,000	18,938.6
95% Nicosulfuron technical	193,000	26,747.23	193,000	27,075.18
97% Oxyfluorfen technical	150,000	20,788	150,000	21,042.89
95% Pendimethalin technical	61,500	8,523.08	61,500	8,627.58
95% Pretilachlor technical	33,800	4,684.23	32,800	4,601.38
97% Pyrazosulfuron-ethyl technical	231,800	32,124.4	225,000	31,564.33





80% Quinclorac technical	133,000	18,432.03	133,000	18,658.03
95% Quizalofop-P-ethyl technical	192,500	26,677.94	192,500	27,005.04
95% Tribenuron-methyl technical	97,000	13,442.91	92,150	12,927.35
95% Trifluralin technical	40,500	5,612.76	40,500	5,681.58

Note: Ex-works price includes VAT.

Source: CCM

### Shanghai port prices of main herbicides in China, 8 August, 2023





TABLE 15: Shanghai port prices of main herbicides in China, 8 August, 2023

Product	20230708		20230808	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	13,700	1,898.64	13,688	1,920.23
92% Acetochlor technical	30,000	4,157.6	29,500	4,138.43
97% Atrazine technical	36,500	5,058.41	36,500	5,120.44
96% Bensulfuron-methyl technical	165,500	22,936.1	160,500	22,515.89
92% Butachlor technical	22,500	3,118.2	22,500	3,156.43
95% Clomazone technical	104,500	14,482.31	104,500	14,659.88
95% Cyhalofop-butyl technical	129,500	17,946.98	129,500	18,167.02
97% Diuron technical	38,500	5,335.59	38,500	5,401.01
98% Fenclorim technical	108,500	15,036.66	105,500	14,800.16
95% Fenoxaprop-P-ethyl technical	157,500	21,827.4	154,500	21,674.17
96% Fluroxypyr technical	125,500	17,392.63	108,500	15,221.02
95% Fomesafen technical	134,400	18,626.05	134,400	18,854.43
95% Glufosinate ammonium technical	65,200	9,035.85	63,000	8,838.01
95% Glyphosate technical	28,000	3,880.43	36,300	5,092.38
95% Haloxyfop-P-methyl technical	143,500	19,887.19	139,500	19,569.88
97% Metolachlor technical	50,500	6,998.63	50,500	7,084.44
95% Metsulfuron-methyl technical	135,500	18,778.5	135,500	19,008.74
95% Nicosulfuron technical	193,500	26,816.53	193,500	27,145.32
97% Oxyfluorfen technical	150,500	20,857.3	150,500	21,113.03
95% Pendimethalin technical	62,000	8,592.37	62,000	8,697.73
95% Pretilachlor technical	34,300	4,753.52	33,300	4,671.52
97% Pyrazosulfuron-ethyl technical	232,300	32,193.69	225,500	31,634.47





80% Quinclorac technical	133,500	18,501.32	133,500	18,728.17
95% Quizalofop-P-ethyl technical	193,000	26,747.23	193,000	27,075.18
95% Tribenuron-methyl technical	97,500	13,512.2	92,650	12,997.49
95% Trifluralin technical	41,000	5,682.05	41,000	5,751.72

*Note: Port price equals the ex-works price plus the transport fee from the factory to the port, and the ex-works price includes VAT.  
Source: CCM*

### FOB Shanghai prices of main herbicides in China, 8 August, 2023



TABLE 16: FOB Shanghai prices of main herbicides in China, 8 August, 2023, USD/t

Product	20230708	20230808
98% 2,4-D technical	1,863.3	1,884.44
92% Acetochlor technical	4,078.97	4,059
97% Atrazine technical	4,831.16	4,890.39
96% Bensulfuron-methyl technical	22,363.69	21,951.89
92% Butachlor technical	3,089.29	3,127.17
95% Clomazone technical	14,151.53	14,325.04
95% Cyhalofop-butyl technical	16,878.5	17,085.45
97% Diuron technical	5,233	5,297.16
98% Fenclorim technical	14,682.34	14,449.52
95% Fenoxaprop-P-ethyl technical	21,287.39	21,136.65
96% Fluroxypyr technical	16,952.69	14,826.71
95% Fomesafen technical	18,187.53	18,410.53
95% Glufosinate ammonium technical	8,465.42	8,277.83
95% Glyphosate technical	4,123.96	5,434.48
95% Haloxyfop-P-methyl technical	19,384.19	19,073
97% Metolachlor technical	6,888.23	6,972.69
95% Metsulfuron-methyl technical	18,341.17	18,566.05
95% Nicosulfuron technical	26,131.72	26,452.12
97% Oxyfluorfen technical	19,605.18	19,845.56
Paraquat 42% TK	2,946.63	3,053.78
95% Pendimethalin technical	8,430.78	8,534.15
95% Pretilachlor technical	4,701.34	4,618.19
97% Pyrazosulfuron-ethyl technical	31,373.77	30,826.79





80% Quinclorac technical	18,057.55	18,278.95
95% Quizalofop-P-ethyl technical	26,064.02	26,383.59
95% Tribenuron-methyl technical	13,171.19	12,666.05
95% Trifluralin technical	5,421.63	5,488.11

*Note: FOB price is calculated mainly based on ex-works price, tax refund, value added tax rate, exchange rate, etc.  
Source: CCM*

**Journalist : Xunyu Liu**  
**Editor : Joanna**  
**Chief Editor : Anton Huang**  
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17th Floor, Huihua Commercial & Trade Building, No.80 XianlieZhong Road Guangzhou, 510070, P. R. China

**Tel:+86-20-37616606**

Fax:+86-20-37616768

E-mail:econtact@cnchemicals.com

Website:www.cnchemicals.com