

# Herbicides China Monthly Report 202309

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## Headline

In early Sept., some herbicides TC had stable price, while some others had price falls. Of the main herbicides TC CCM investigated, atrazine TC and metolachlor TC experienced quick decreases in the price, and glyphosate TC had continued price reduction starting from late Aug.

In late Sept., most herbicides TC experienced MoM decreases in their prices, as market demand remained slack. Of the main herbicides TC CCM investigated, diuron TC and acetochlor TC saw their prices edge up a bit on a monthly basis.

At present, one of the key tasks in Gansu Ruidong's agenda is to actively promote the construction of the phase II program of the 13,600 t/a high-efficacy low-toxicity herbicide TC, formulation and intermediate project. The phase II will: first, expand capacity for thidiazuron TC and 1-methyl-4-ethylformate-5-pyrazole sulphonamide on the basis of phase I through technological transformation; second, build new capacity for rimsulfuron TC and intermediate, methyl 2-sulfamoylbenzoate, ethyl 2-sulfamoylbenzoate, sym-triazine, pyribenzoxim TC, bispyribac-sodium TC, tribenuron-methyl WP and tribenuron-methyl WG.

On 29 Aug., Nantong Jiangshan made two important announcements—it has planned to acquire 67% of equity interests of Nantong Uniphos and launch a 100,000 t/a pesticide formulation intelligence transformation project. For the new project, Nantong Jiangshan proposes to increase production capacity for glyphosate and diazinon formulations, as well as a series of pesticide formulations. Forms of its formulation products will be enriched, covering GR, CS, EW, ME, SC, etc.

Hangzhou Nutrichem has completed the construction of 15,000 t/a S-metolachlor technological transformation project and put the lines into trial production starting from 1 Aug., 2023. Once the project passes completion-based acceptance check and the lines go into normal operation, Hangzhou Nutrichem's total active capacity for S-metolachlor will expand to 15,000 t/a.

In late Aug., the EI report of Ningxia Gerui's 6,000 t/a MCPA-isooctyl green continuous production process project was accepted by local government.

On 28 Aug., the Measures for Chemical Park Management in Jiangsu Province (Exposure Draft) was released. The Measures is mainly aimed at regulating the management of chemical parks and optimising industrial layout in Jiangsu Province.

In Sept., the Department of Agrochemical Management of MARA approved the registration of 42 herbicide products, which include five TC products. Popular forms are OD, SC and SL. The majority of the products are of low toxicity.

In early Sept., the prices of paraquat and pyridine in China had MoM increases, which is in line with the previous projection. Price rises in the two products are expected to continue in the short term.

In June–July 2023, China's herbicide formulations were mainly exported to Brazil, Thailand, Australia, etc.; the export volume declined by 8.66% YoY. However, import volume of herbicide formulations to China experienced over fivefold increase YoY in this period. A great majority of these products were imported from Malaysia.







### Editor's note

In Sept., most herbicides TC experienced MoM decreases in their prices, as market demand remained slack. Of the main herbicides TC CCM investigated, diuron TC and acetochlor TC saw their prices edge up a bit on a monthly basis, and ametryn TC, bensulfuron-methyl TC, florasulam TC and diquat TK had stable price. However, the general price downtrend is expected to continue.

As to company and supply, to increase competitiveness and market share, some companies have been active in launching new projects. Nantong Jiangshan has proposed to increase production capacity for glyphosate and diazinon formulations to gain more share in the market. Gansu Ruidong will strengthen its advantage in the market of sulfonylurea herbicides. Ningxia Gerui has planned to build a 6,000 t/a MCPA-isooctyl project. Beyond these, Hangzhou Nutrichem has put its 15,000 t/a S-metolachlor lines into trial run.

As regards latest policy, Jiangsu Province has released the *Measures for Chemical Park Management in Jiangsu Province (Exposure Draft)*, which is aimed at regulating the management of chemical parks, optimising industrial layout, driving industrial transformation and upgrading, improving quality and efficiency, and pursuing safe, high-quality and green development.

This month, the Department of Agrochemical Management of MARA approved the registration of 42 herbicide products, which include five TC products. Popular forms are OD, SC and SL. The majority of the products are of low toxicity.

*The USD/CNY exchange rate in this newsletter is USD1.00 = CNY7.1788 on 1 Sept., 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

### Atrazine and metolachlor prices drop quickly, glyphosate price keeps falling in early Sept.

Summary: In early Sept., some herbicides TC had stable price, while some others had price falls. Of the main herbicides TC CCM investigated, atrazine TC and metolachlor TC experienced quick decreases in the price, and glyphosate TC had continued price reduction starting from late Aug.

In early Sept., some herbicides TC had stable price, while some others had price falls. Of the main herbicides TC CCM investigated, atrazine TC and metolachlor TC experienced quick decreases in the price, and nicosulfuron TC and glufosinate-ammonium TC had slight dips from the late-Aug. level. For glyphosate TC, the downward movement of the price witnessed in late Aug. continued. Weak domestic herbicide market and sluggish overseas demand were main reasons for the dull performance. Considering the unbalanced supply-demand relation in the market, overall herbicide price is expected to keep going south in the near future.

Of triazine herbicides, ametryn TC had stable price, but atrazine TC had a 9.44% MoM decrease in the price. Atrazine TC producers like Hebei Lingang Chemical Co., Ltd., Shandong Kesai Agrochem Co., Ltd. and Zhejiang Zhongshan Chemical Industry Group Co., Ltd. have maintained normal supply, while Shandong Binnong Technology Co., Ltd. mainly self-consumes the product. Although operating rates in producers have been kept at a low level, it is believed that overall supply is sufficient to meet downstream demand and the price of atrazine TC would keep stable.

For sulfonyleurea herbicides, the prices of quizalofop-P-ethyl TC and bensulfuron-methyl TC were steady in early Sept., but the price of nicosulfuron TC slipped by 2.59% MoM. Although the nicosulfuron TC lines in Jiangsu Fengshan Group Co., Ltd., Jingbo Agrochemicals Technology Co., Ltd. and Anhui Fengle Agrochemical Co., Ltd. have been in suspension, the 500 t/a line in Inner Mongolia Nab Technology Co., Ltd. has come into operation. Oversupply of the product in an off season has driven the price down, and the trend would continue in the short term.

For amide herbicides, the prices of acetochlor TC and metolachlor TC went down, but the price of pretilachlor TC stayed static. Currently, demand for amide herbicides has been small, as application period of these herbicides was basically over. As regards organophosphorus herbicides, glufosinate-ammonium TC saw its price edge down 0.64% MoM, and glyphosate TC saw the price decline by 9.22% MoM. Producers of these two products mainly consume their inventories at present. There have not been many new export orders coming, and most of them were small orders, as products offered at higher prices could not be well accepted by these traders. It is estimated that the price of glufosinate-ammonium TC and glyphosate TC will decrease in the near future.

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





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

Category	Product	Content of active ingredient	Ex-works price in early Sept., RMB/t	USD/t	MoM change (based on RMB price)
Triazine herbicide	Atrazine TC	97%	32,600	4,541.15	Down
	Ametryn TC	95%	44,500	6,198.81	Basically flat
Sulfonylurea herbicide	Nicosulfuron TC	95%	188,000	26,188.22	Down
	Quizalofop-P-ethyl TC	95%	192,500	26,815.07	Basically flat
	Bensulfuron-methyl TC	96%	160,000	22,287.85	Basically flat
Amide herbicide	Pretilachlor TC	95%	32,800	4,569.01	Basically flat
	Acetochlor TC	92%	28,500	3,970.02	Down
	Metolachlor TC	97%	45,000	6,268.46	Down
Organophosphorus herbicide	Glufosinate-ammonium TC	95%	62,100	8,650.47	Down
	Glyphosate TC	95%	32,500	4,527.22	Down
Triazolopyrimidine sulfonamide herbicide	Florasulam TC	98%	457,900	63,785.03	Basically flat
Bipyridinium herbicide	Diquat TK	40%	25,000	3,482.48	Basically flat
Substituted phenylurea herbicide	Diuron TC	97%	38,000	5,293.36	Basically flat

Source:CCM

### Prices of many herbicides TC go down in late Sept.

Summary: In late Sept., most herbicides TC experienced MoM decreases in their prices, as market demand remained slack. Of the main herbicides TC CCM investigated, diuron TC and acetochlor TC saw their prices edge up a bit on a monthly basis.

In late Sept., market demand for herbicides remained slack. Of the 13 main herbicides TC CCM investigated, on a monthly basis, only diuron TC and acetochlor TC saw their prices edge up, and ametryn TC, bensulfuron-methyl TC, florasulam TC and diquat TK had stable price. Prices of most herbicides TC experienced MoM decreases.

Of triazine herbicides, ametryn TC had stable price, but atrazine TC saw continued price fall, with a month-on-month decrease of 16.67%. Atrazine TC producers have operated at a low level, but the supply has been sufficient to meet downstream demand. Although the raw





material price kept stable, atrazine TC price was forced down by sluggish demand. Producers like Hebei Lingang Chemical Co., Ltd., Shandong Kesai Agrochem Co., Ltd., Zhejiang Zhongshan Chemical Industry Group Co., Ltd. and Shandong Binnong Technology Co., Ltd. all have maintained normal supply. It should be noted that Shandong Binnong Technology Co., Ltd.'s atrazine TC is mainly consumed by itself.

Of sulfonylurea herbicides, only bensulfuron-methyl TC had kept a steady price; quizalofop-P-ethyl TC and nicosulfuron TC saw their prices slip by 3.90% and 2.59% MoM, respectively in late Sept. As the raw material price kept stable, production cost could not prop up the prices of sulfonylurea herbicides. Weak demand dragged the prices down. Production lines in Jiangsu Fengshan Group Co., Ltd., Inner Mongolia Nab Technology Co., Ltd. and Zibo Nab Agrochemicals Limited have come into suspension, and would not resume operation in the short term. Therefore, market supply would be small. However, it is believed that the downward trend in the prices of quizalofop-P-ethyl TC and nicosulfuron TC would continue in the near future, as the products are still in the off-season.

For amide herbicides, acetochlor TC experienced an increase of 1.05% MoM, while pretilachlor TC and metolachlor TC saw their prices go south. In particular, the price of metolachlor TC in late Sept. dived 16% MoM, affected by shrinking exports. In fact, the little rise in acetochlor TC price was the result of production suspension in some producers. It is expected that the prices of metolachlor TC and acetochlor TC would keep stable for a short while.

As regards organophosphorus herbicides, in late Sept., glufosinate-ammonium TC price was down 0.64% MoM, and glyphosate TC price declined by 9.23% MoM, due to weak demand both at home and abroad. There were few domestic orders, and new export orders were small. Most of domestic glyphosate TC producers have operated at a low level; Hubei Trisun Chemical Co., Ltd., Zhejiang Wynca Chemical Industrial Group Co., Ltd. and Sichuan Hebang Biotechnology Co., Ltd. have set limits on production. Operating rates in glufosinate-ammonium TC producers have also been kept low, except for normal supply in Lier Chemical Co., Ltd. and Hebei Veyong Biochemical Co., Ltd. Yet there was still oversupply in the market.

Ex-works prices of florasulam TC and diquat TK remained steady in late Sept. Diuron TC price went up by 0.79% MoM, mainly affected by fluctuations in raw material price.







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

Category	Product	Content of active ingredient	Ex-works price in late Sept., RMB/t	USD/t	MoM change (based on RMB price)
Triazine herbicide	Atrazine TC	97%	30,000	4,178.97	Down
	Ametryn TC	95%	44,500	6,198.81	Basically flat
Sulfonylurea herbicide	Nicosulfuron TC	95%	188,000	26,188.22	Down
	Quizalofop-P-ethyl TC	95%	185,000	25,770.32	Down
	Bensulfuron-methyl TC	96%	160,000	22,287.85	Basically flat
Amide herbicide	Pretilachlor TC	95%	31,900	4,443.64	Down
	Acetochlor TC	92%	28,800	4,011.81	Up
	Metolachlor TC	97%	42,000	5,850.56	Down
Organophosphorus herbicide	Glufosinate-ammonium TC	95%	62,100	8,650.47	Down
	Glyphosate TC	95%	30,500	4,248.62	Down
Triazolopyrimidine sulfonamide herbicide	Florasulam TC	98%	457,900	63,785.03	Basically flat
Bipyridinium herbicide	Diquat TK	40%	25,000	3,482.48	Basically flat
Substituted phenylurea herbicide	Diuron TC	97%	38,300	5,335.15	Up

Source:CCM





## Company and supply

### Gansu Ruidong to expand capacity for sulfonylurea herbicides

Summary: At present, one of the key tasks in Gansu Ruidong's agenda is to actively promote the construction of the phase II program of the 13,600 t/a high-efficacy low-toxicity herbicide TC, formulation and intermediate project. The phase II will: first, expand capacity for thidiazuron TC and 1-methyl-4-ethylformate-5-pyrazole sulphonamide on the basis of phase I through technological transformation; second, build new capacity for rimsulfuron TC and intermediate, methyl 2-sulfamoylbenzoate, ethyl 2-sulfamoylbenzoate, sym-triazine, pyribenzoxim TC, bispyribac-sodium TC, tribenuron-methyl WP and tribenuron-methyl WG.

Late Aug. CCM learned from Gansu Ruidong Chemical Co., Ltd. (Gansu Ruidong) that the phase I program of its 13,600 t/a high-efficacy low-toxicity herbicide TC, formulation and intermediate project had been completed and the lines had gone into operation. At present, one of the key tasks in the company's agenda is to actively promote the construction of the phase II program. Details of the phase II are: first, on the basis of phase I lines, expand the capacity for thidiazuron TC to 1,000 t/a and that for 1-methyl-4-ethylformate-5-pyrazole sulphonamide to 500 t/a, through technological transformation; second, build new capacity for rimsulfuron TC (200 t/a) and intermediate (125 t/a), methyl 2-sulfamoylbenzoate (700 t/a), ethyl 2-sulfamoylbenzoate (100 t/a), sym-triazine (400 t/a), pyribenzoxim TC (50 t/a), bispyribac-sodium TC (200 t/a), tribenuron-methyl WP (100 t/a) and tribenuron-methyl WG (100 t/a).

As to the use of the intermediates planned in the phase II, besides the rimsulfuron intermediate, methyl 2-sulfamoylbenzoate is a key intermediate for the production of metsulfuron-methyl TC, ethametsulfuron-methyl TC, etc.; ethyl 2-sulfamoylbenzoate is a key intermediate for the production of chlorimuron-ethyl TC; sym-triazine is an important intermediate for the production of products like metsulfuron-methyl TC, chloresulfuron TC, thifensulfuron-methyl TC and triasulfuron TC.

Gansu Ruidong, invested by Jiangsu Ruidong Pesticide Co., Ltd., is a pesticide company located in the Lanzhou New Area Chemical Park, Lanzhou City, Gansu Province. After establishment, the company proposed the 13,600 t/a project, main products covered in which include sulfonylurea herbicides and triazolopyrimidine sulfonamide herbicides. According to the plan, the ongoing 13,600 t/a project should be constructed in stages. In March 2020, the construction of phase I started. Now, the newly built production lines of 200 t/a chlorimuron-ethyl TC, 300 t/a metsulfuron-methyl TC, 100 t/a tribenuron-methyl TC, 300 t/a bensulfuron-methyl TC, 100 t/a thifensulfuron-methyl TC, 50 t/a sulfometuron-methyl TC, 50 t/a halosulfuron-methyl TC, 200 t/a pyrazosulfuron-ethyl TC, 200 t/a thidiazuron TC and 150 t/a 1-methyl-4-ethoxycarbonylpyraole-5-sulfonamide have come into operation. Of the products planned in the phase I program, 1-methyl-4-ethoxycarbonylpyraole-5-sulfonamide is a key intermediate for pyrazosulfuron-ethyl TC. Gansu Ruidong will continue to conduct the rest phases of the large-scale project in the future.

It is worth noting that the chemical park in which Gansu Ruidong is located, Lanzhou New Area Chemical Park, has attracted many pesticide enterprises to negotiate about new investments there in recent years, since the park boasts location advantage, favourable policy support and sound infrastructure. Another big player in sulfonylurea herbicide business in China, Jiangsu Repond Agrochemical Co., Ltd. (Jiangsu Repond), also established a subsidiary in this park, Gansu Kangbasi Biotechnology Co., Ltd. (Gansu Kangbasi), and launched a high-end pesticide TC and intermediate project here.





Before starting to build Gansu Kangbasi into a new production base, Jiangsu Reponit had already had production capacity of 100 t/a nicosulfuron TC, 400 t/a tribenuron-methyl TC, 300 t/a bensulfuron-methyl TC, 200 t/a pyrazosulfuron-ethyl TC, 50 t/a ethoxysulfuron TC, 50 t/a flumetsulam TC, 30 t/a amidosulfuron TC, 200 t/a metsulfuron-methyl TC, 100 t/a thifensulfuron-methyl TC, 200 t/a chlorimuron-ethyl TC, 100 t/a thidiazuron TC, 40 t/a flucarbazone-Na TC, 20 t/a flazasulfuron TC, 50 t/a rimsulfuron TC, 100 t/a carfentrazone-ethyl TC, 50 t/a bispyribac-sodium TC, 200 t/a metribuzin TC, 30 t/a sulfentrazone TC and 10,000 t/a pesticide formulations, in its production base in the Yangkou Chemical Park, Rudong County, Nantong City, Jiangsu Province.

The high-end pesticide TC and intermediate project Jiangsu Reponit planned in Gansu Kangbasi, will not only help consolidate and enhance its competitive edge in the sulfonylurea herbicide market, but also further extend its reach in pesticides of other categories and their intermediates. Currently, Gansu Kangbasi has built up and put into production the 1,000 t/a quizalofop-P-ethyl TC and 1,000 t/a oxadiazon TC lines planned in the project. Production lines for other products are still under construction.

### **Nantong Jiangshan aims to gain more shares in glyphosate & diazinon formulation market**

Summary: On 29 Aug., Nantong Jiangshan made two important announcements—it has planned to acquire 67% of equity interests of Nantong Uniphos and launch a 100,000 t/a pesticide formulation intelligence transformation project. For the new project, Nantong Jiangshan proposes to increase production capacity for glyphosate and diazinon formulations, as well as a series of pesticide formulations. Forms of its formulation products will be enriched, covering GR, CS, EW, ME, SC, etc.

On 29 Aug., Nantong Jiangshan Agrochemical & Chemicals Co., Ltd. (Nantong Jiangshan) released two important announcements, one concerning equity acquisition and the other project investment.

The company plans to acquire 67% of equity interests of Nantong Uniphos Chemicals Co., Ltd. (Nantong Uniphos) from Shanghai Wujin Fine Chemical Co., Ltd., Changzhou Wujin Water Quality Stabilizer Factory Co., Ltd. and Jiangyin Shuangma Chemical Co., Ltd. at USD24.51 million (RMB175.93 million). According to Nantong Jiangshan, the deal could help extend its industrial chain to cover water treatment agent, a downstream sector of phosphorus-based intermediates such as phosphorus trichloride, dimethyl phosphite and phosphorous acid; with this move, it could improve its business structure, and expand the scale and share of its new material business. This planned acquisition is thus in line with the company's development plan for the 14th Five-Year Period and the directions in future development—towards industries "three plus one" (pesticides, new materials, pesticide formulation, plus basic chemicals).

Nantong Uniphos is a private enterprise and a major water treatment agent producer in China. There exist differences in corporate culture and mode of management between Nantong Uniphos and Nantong Jiangshan. Once the acquisition is completed, some key personnel may leave Nantong Uniphos, which would have negative effects on Nantong Jiangshan's business performance. Yet Nantong Jiangshan believes that in general, no big influences would be exerted on its financial status and operation, as it has already come up with some countermeasures for the potential risks in the integration and the risks of losing key personnel.

Nantong Jiangshan also announced that it would invest in a 100,000 t/a pesticide formulation intelligence transformation project, so as to





expand its share in pesticide formulation market, increase profitability in this business, and meet the needs for the development of high quality formulations. Main reasons for launching the project include:

- As to its pesticide business, currently, glyphosate business mainly relies on the sale of TC products, and sales of glyphosate formulations in granular forms and of other forms are quite insignificant. Plus, production capacity for diazinon formulations is too small to have economies of scale. Moreover, its existing formulations are of rather traditional forms; enrichment of product variety and product quality improvement are much in need. After the project is completed, Nantong Jiangshan could produce products in forms including GR, CS, EW, ME and SC, have larger capacity for glyphosate in granular forms and diazinon formulations, and have broader product series to offer, such as dichlorvos SL.
- As to production technology, through intelligence transformation, full process automation can be achieved in the subpackaging of formulation products, pass yield increased, costs of production and storage reduced, and storage capacity better utilised.

Days before, on 18 Aug., Nantong Jiangshan announced that a novel green herbicide TC and formulation project would be launched by its wholly-owned subsidiary Jiangshan (Yichang) Crop Technology Co., Ltd. in the Yaojiagang Chemical Park, Zhijiang City, Yichang City, Hubei Province, with an investment of USD110.74 million (RMB794.98 million). The project will construct 500 t/a benmicao-zuo (product code: JS-T205) line, formulation lines and supporting facilities. Nantong Jiangshan has obtained the right to an exclusive licence concerning global patents for benmicao-zuo, and the patents are protected until 15 Dec., 2034. Patents for benmicao-zuo TC have so far been granted in China, Argentina, Australia, Canada, the US and Brazil.

### **Hangzhou Nutrichem puts 15,000 t/a S-metolachlor lines into trial run**

Summary: Hangzhou Nutrichem has completed the construction of 15,000 t/a S-metolachlor technological transformation project and put the lines into trial production starting from 1 Aug., 2023. Once the project passes completion-based acceptance check and the lines go into normal operation, Hangzhou Nutrichem's total active capacity for S-metolachlor will expand to 15,000 t/a.

Early Sept., CCM learned from Hangzhou Nutrichem Co., Ltd. (Hangzhou Nutrichem) that it had completed the construction of 15,000 t/a S-metolachlor technological transformation project and put the lines into trial production starting from 1 Aug., 2023. This is a welcome fillip to the company's S-metolachlor TC business. Once the project passes completion-based acceptance check and the lines go into normal operation, Hangzhou Nutrichem's total active capacity for S-metolachlor will expand to 15,000 t/a.

Hangzhou Nutrichem, formerly known as Hangzhou Qingfeng Agrochemical Co., Ltd., was established in 1957, and is one of the early pioneers in China's pesticide industry. In 2013, it was acquired by Nutrichem Co., Ltd. (Nutrichem). The company is now located in the Hangzhou Linjiang High-tech Industrial Park, Qiantang New Area, Hangzhou City, Zhejiang Province. Before launching the 15,000 t/a S-metolachlor project, Hangzhou Nutrichem had already had active production capacity of 2,000 t/a propisochlor TC, 5,000 t/a pretilachlor TC, 7,000 t/a metolachlor TC and 3,000 t/a acetochlor TC, 3,000 t/a S-metolachlor TC and large capacity for pesticide formulations. Moreover, it was pushing ahead with the construction of novel pesticide upgrading project. Thanks to the large capacity for several amide herbicides TC, Hangzhou Nutrichem is a major amide herbicide producer in China.

The novel pesticide upgrading project is a key industrial project planned to broaden its reach in pesticide business, as well as to serve the overall development strategy of its parent company Nutrichem. It involves the construction at phases of production lines of 1,000 t/a





imazapyr TC, 200 t/a imazapic TC, 800 t/a imazethapyr TC, 500 t/a imazamox TC, 1,000 t/a flufenacet TC, 2,000 t/a dithianon TC, 2,000 t/a sulfentrazone TC, 1,000 t/a pinoxaden TC, 1,000 t/a saflufenacil TC, 500 t/a fluridone TC, 500 t/a tembotrione TC and 4,000 t/a metamitron TC, along with supporting facilities.

Similarly, the 15,000 t/a S-metolachlor technological transformation project, launched in 2022, is also a key industrial project for the benefits of Hangzhou Nutrichem and Nutrichem as well. Hangzhou Nutrichem intends to expand its S-metolachlor from 3,000 t/a to 15,000 t/a with the project, by adding equipment including fixed bed reactors, imine synthesis reactors, hydrogenation reactors and rectification equipment, and at the same time by upgrading production technology. It should be minded that to get this 15,000 t/a S-metolachlor project approved by local government, Hangzhou Nutrichem decided to give up the construction of 2,000 t/a sulfentrazone TC and 4,000 t/a metamitron TC lines planned in the novel pesticide upgrading project.

S-Metolachlor is an amide herbicide developed by Syngenta, on the structural basis of metolachlor. Production process for the product, a technological barrier to many pesticide enterprises, limits S-metolachlor TC producers with large-scale production capacity to just a few in China. At present, major producers of S-metolachlor TC in domestic market include Hangzhou Nutrichem, Nantong Jiangshan Agrochemical & Chemicals Co., Ltd. (Nantong Jiangshan), Shandong Binnong Technology Co., Ltd. and Jiangsu Changqing Agrochemical Co., Ltd. (Jiangsu Changqing).

Of these big producers, Nantong Jiangshan and Jiangsu Changqing also have had announced their S-metolachlor expansion projects. Along with fast developments in technology, it is expected that many more Chinese pesticide producers will crack the problems that prevent them from realising large-scale production of S-metolachlor TC. And total capacity for this product in China probably will keep expanding in the next few years.

Another noteworthy thing is that, in the process of the construction of S-metolachlor project, Hangzhou Nutrichem built up the 1,000 t/a imazapyr TC line planned in the novel pesticide upgrading project and put the line into production. Liaoning Cynda Chemical Co., Ltd. (Liaoning Cynda) also has newly built up a 1,000 t/a imazapyr TC line in its plant in the Chemical Industrial Park of Huludao Economic Development Zone, Huludao City, Liaoning Province. In June 2023, Liaoning Cynda announced completion of the construction work and the start of trial run.

### **Ningxia Gerui plans to build 6,000 t/a MCPA-isooctyl project**

Summary: In late Aug., the EI report of Ningxia Gerui's 6,000 t/a MCPA-isooctyl green continuous production process project was accepted by local government.

In late Aug., the Department of Ecology and Environment of Ningxia Hui Autonomous Region announced the acceptance of the environmental impact (EI) report of Ningxia Gerui Fine Chemical Co., Ltd. (Ningxia Gerui)'s 6,000 t/a MCPA-isooctyl green continuous production process project. The project, with total investment of USD7.87 million (RMB56.50 million), will build production capacity of 6,000 t/a MCPA-isooctyl in the company's plant in the Ningxia Pingluo Industrial Park, Shizuishan City, Ningxia Hui Autonomous Region.







Ningxia Gerui expects the project will generate annual revenue of USD22.65 million (RMB162.58 million) once put into operation.

MCPA-isooctyl, one of the MCPA series, is a hormone-type phenoxyacid herbicide. It is of high efficacy, low toxicity, broad weed-killing spectrum and relatively high added value. It is mainly used to control broadleaf weeds in the fields of rice, maize, triticeae crops, etc. MCPA-isooctyl SC products have attracted much attention in the market. With ever growing market demand, MCPA-isooctyl products enjoy bright market prospect.

Currently, there are 55 MCPA-isooctyl products approved of registration in China, and popular forms are SE and OD; only ADAMA Huifeng (Jiangsu) Co., Ltd. (ADAMA Huifeng) has so far acquired registration certificate for MCPA-isooctyl TC in China. It should be noted that neither Ningxia Gerui nor its parent company Shandong Weifang Rainbow Chemical Co., Ltd. (Weifang Rainbow) has obtained any registration certificate for MCPA-isooctyl products.

Ningxia Gerui, located in the Ningxia Pingluo Industrial Park, mainly engages in the production and sale of pesticides, fine chemicals and other chemicals, and in the import and export of products and raw materials. In May 2015, the company was acquired by Weifang Rainbow. Since its establishment in 2006, Ningxia Gerui has planned several pesticide projects. During 2012–2014, it built up and put into operation production lines for N-(phosphonomethyl)iminodiacetic acid (PMIDA), glyphosate, phosphorus trichloride and phosphorous acid, but the equipment was suspended in Dec. 2014 due to unsatisfactory market performance; the lines have been dismantled. At present, Ningxia Gerui has active production capacity of 3,000 t/a propanil, 4,800 t/a prometryn, 5,000 t/a terbutryn, 15,000 t/a 2,4-D, 1,000 t/a 2,4-D Na, 2,000 t/a clethodim, 2,000 t/a MCPA, 20,000 t/a ametryn, 2,400 t/a captan, 600 t/a folpet and 3,000 t/a 4-chloro-2-methylphenol. Besides, it has a 1,000 t/a sulfentrazone line in trial run, and new production capacity of 9,000 t/a captan, 1,000 t/a flumioxazin and 10,000 t/a MCPA still under construction.

In recent years, there have been some MCPA-isooctyl projects launched or put into production in China. For instance, ADAMA Huifeng had two projects passed acceptance checks in May 2021 and Feb. 2022, and thus added 10,000 t/a MCPA-isooctyl capacity in total. And in April 2023, Gansu Qinye Chemical Co., Ltd. released some basic environmental impact assessment information on its 12,000 t/a fine chemical production line transformation project, which involves the construction of 5,000 t/a MCPA-isooctyl TC capacity.





## Policy

### Jiangsu releases draft measures for chemical park management to solicit opinions

Summary: On 28 Aug., the *Measures for Chemical Park Management in Jiangsu Province (Exposure Draft)* was released. The Measures is mainly aimed at regulating the management of chemical parks and optimising industrial layout in Jiangsu Province.

On 28 Aug., the *Measures for Chemical Park Management in Jiangsu Province (Exposure Draft)* was released at the official website of the Industry and Information Technology Department of Jiangsu Province, to solicit opinions and suggestions from parties of interest. The Measures is mainly aimed at regulating the management of chemical parks, optimising industrial layout, driving industrial transformation and upgrading, improving quality and efficiency, and pursuing safe, high-quality and green development.

The Measures has 12 chapters and 68 articles. Chapter one with six articles gives legal ground, scope of application, management ownership and definitions of related terms. Chapter two with seven articles is themed on planning and layout, which outlines requirements on the construction of chemical parks and park planning. Chapter three with nine articles puts forward obligatory targets in aspects including infrastructure, management, safety, environmental protection. Chapter four with four articles concerning setting up such parks proposes five criteria for accrediting new chemical parks, and clarifies main content for feasibility study report on and application processes for setting up new chemical parks. From chapter five to chapter eleven, rules are formulated concerning management on park expansion, modification to park boundaries, accreditation, withdrawal, project acceptance, and routine supervision, as well as digitalisation-based management. Chapter twelve with three supplementary articles clearly defines how and when the Measures will be implemented.

As regards the management on acceptance of chemical projects into chemical parks:

- The Measures requires setting up a system to evaluate whether a project could enter a park. Parks should formulate industry development guidelines and catalogues of hazardous chemicals that are banned, restricted or controlled, which are adapted to regional characteristics and local realities, and are in accordance with industrial development planning of the parks.
- The Measures requires paying attentions to projects that are encouraged to develop and those are prohibited. In principle, chemical enterprises and chemical projects should be located in chemical parks. And such projects should strictly abide by related laws and regulations, as well as follow national industrial policies. Projects involve advanced technologies, high input-output benefits, low energy consumption, small pollutant discharge or low safety risks are encouraged to construct. New projects for hypertoxic chemicals listed in the Catalogue of Hazardous Chemicals, or chemicals in the List of Priority Chemicals for Regulation should not be allowed; but exceptions will be made to the projects that are needed for the development of strategic emerging industries encouraged at provincial level or at national level, and to the projects that would supplement or extend the industrial chains the parks mainly focus, or that are for the purpose of comprehensive utilisation of wastes from existing projects.
- Concerning new projects and projects for transformation or expansion, the Measures makes it clear that construction application and approval procedures should be gone through in accordance with laws and regulations. For projects involve controlled chemicals, formalities for special permits for construction and production should also be gone through. Besides, chemical enterprises under key monitoring efforts (these enterprises still located outside accredited chemical parks) can launch such chemical projects to optimise product portfolio or improve production techniques, as long as they do not require supply of new land and do not plan new capacity for hazardous chemicals. In principle, such projects could not cause increases in the volume of main pollutants to be discharged; once increases are inevitable, decisions should be made at governments at city level on the basis of each and every case, and balance at county level should be maintained through regional adjustments. Moreover, chemical enterprises under key monitoring efforts located in provincial-level development zones can launch chemical projects of such natures.





## Registration

### 42 Herbicide products approved of registration in Sept.

Summary: In Sept., the Department of Agrochemical Management of MARA approved the registration of 42 herbicide products, which include five TC products. Popular forms are OD, SC and SL. The majority of the products are of low toxicity.

On 8 Sept., 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. Of the approved 42 herbicide products, five are TC products. The majority of the products are of low toxicity, and popular forms of formulation products are OD, SC, SL and EC.

Five registrants have at least two herbicide products approved of registration in this batch; the companies are Shandong Weifang Rainbow Chemical Co., Ltd., Anhui Share World Bio-Tech Co., Ltd., Jiangsu Reopnt Agrochemical Co., Ltd., Shandong Kesai Agrochem Co., Ltd. and Shandong Binnong Technology Co., Ltd. In particular, Weifang Rainbow has seven products approved, all export-only products, which makes up a big share of the total 17 export-only products approved this time.

**TABLE 3:** Herbicide products approved of registration by toxicity released in Sept. 2023

No.	Toxicity	Number
1	Low	35
2	Mild	6
3	Moderate	1
<b>Total</b>		<b>42</b>

Source: MARA



**TABLE 4:** Herbicide products approved of registration by form released in Sept. 2023

No.	Form	Number
1	OD	9
2	SC	8
3	SL	8
4	TC	5
5	EC	5
6	ME	4
7	SP	1
8	EW	1
9	WT	1
<b>Total</b>		<b>42</b>

Source: MARA

**TABLE 5:** Herbicide TC products approved of registration released in Sept. 2023

No.	Registrant	Product
1	Anhui Fengle Agrochemical Co., Ltd.	97% Topramezone
2	Guang'an Lier Chemical Co., Ltd.	90% Glufosinate-p
3	Jiangsu Repont Agrochemical Co., Ltd.	95.50% Carfentrazone-ethyl
4	Jiangsu Repont Agrochemical Co., Ltd.	96% Sulfentrazone
5	Lier Chemical Co., Ltd.	98% Triclopyr-butotyl

Source: MARA

**TABLE 6:** Registrants with at least two herbicide products approved of registration released in Sept. 2023

No.	Registrant	Number
1	Shandong Weifang Rainbow Chemical Co., Ltd.	7
2	Shandong Binnong Technology Co., Ltd.	2
3	Shandong Kesai Agrochem Co., Ltd.	2
4	Anhui Share World Bio-Tech Co., Ltd.	2
5	Jiangsu Repons Agrochemical Co., Ltd.	2

Source: MARA





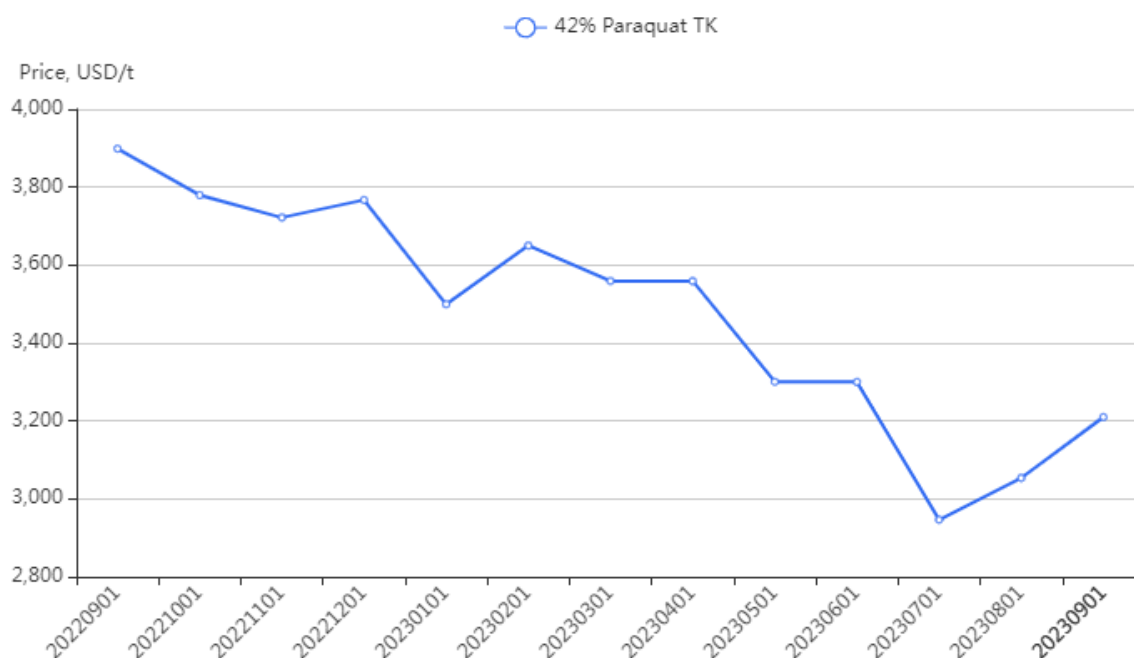
### Paraquat and pyridine

#### Prices of paraquat and pyridine keep going up in early Sept.

Summary: In early Sept., the prices of paraquat and pyridine in China had MoM increases, which is in line with the previous projection. Price rises in the two products are expected to continue in the short term.

CCM's price monitoring data show that the FOB price of paraquat 42% TK in China went up 5.12% MoM to USD3,210/t in early Sept.; on a yearly basis, the price still registered a 17.66% decrease. The ex-works price of pure pyridine edged up to USD2,675/t (RMB19,200/t) in early Sept., up 3.78% MoM, which is 46.67% lower than the price in Sept. 2022 though. As paraquat market kept improving along with overseas orders coming continuously, the price of pyridine also went up steadily. The current small increases, in line with the projection made last month, are expected to continue in the near future.

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



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





## Trade analysis

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

Summary: In June–July 2023, China's herbicide formulations were mainly exported to Brazil, Thailand, Australia, etc.; the export volume declined by 8.66% YoY. However, import volume of herbicide formulations to China experienced over fivefold increase YoY 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 June–July 2023, China exported 301,431,06 tonnes (actual volume, the same hereafter) of herbicide formulation products with a total export value of USD781.39 million. Compared with the export volume achieved in June–July 2022, this year's figure contracted by 8.66%, or a reduction of some 28,584 tonnes. As regards herbicide formulation imports, in the same period, China imported 1,459.24 tonnes of herbicide formulation products with a value totalling USD15.31 million. The import volume rocketed by 472.89% YoY. A great majority of these products were imported from Malaysia.

In terms of export, average export price during June–July 2023 plunged by 48.80% YoY to USD2.59/kg, mainly affected by weak market demand and big inventories. In particular, the prices of glufosinate-ammonium and glyphosate, main organophosphorus herbicides in the market, were much lower than the prices last year; the price fall brought down the overall herbicide export price. Major export destinations of China's herbicide formulations were Brazil, Thailand, Australia, etc. in the two months. Of the top 10 destinations in June–July 2023, Nigeria had the biggest YoY decrease in the volume, down 52.57%, followed by Brazil and Cambodia with 22.57% and 20.91% reduction, respectively; in contrast, Ghana saw its volume increase by 47.36% YoY, jumping from 9,078 tonnes to 13,377 tonnes.

In terms of import, import price of herbicide formulations averaged at USD10.49/kg during June–July 2023, down 63.92% YoY. Over 60% of the herbicide formulation imports came from Malaysia; the volume from this origin country was more than 45 times over the volume registered in the same period last year.

TABLE 7: June and July exports of herbicide formulations from China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
June	127,667,733	2.67	164,809,597	5.03
July	173,763,322	2.54	165,205,785	5.10
<b>Total</b>	<b>301,431,055</b>	<b>2.59</b>	<b>330,015,382</b>	<b>5.06</b>

Note:1. The data were updated to 15 Sept., 2023.

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

Source:China Customs



**TABLE 8:** Top 10 destinations of herbicide formulations exported from China, June–July 2023 vs June–July 2022

No.	June–July 2023			June–July 2022		
	Destination	Volume, tonne	Share	Destination	Volume, tonne	Share
1	Brazil	74,087	24.58%	Brazil	95,688	28.99%
2	Thailand	25,977	8.62%	Thailand	22,750	6.89%
3	Australia	20,326	6.74%	Australia	17,682	5.36%
4	Indonesia	16,755	5.56%	Nigeria	13,646	4.14%
5	Ghana	13,377	4.44%	Indonesia	13,307	4.03%
6	Uruguay	10,466	3.47%	Argentina	12,939	3.92%
7	Cambodia	9,023	2.99%	Cambodia	11,408	3.46%
8	The US	8,344	2.77%	Ghana	9,078	2.75%
9	Nigeria	6,472	2.15%	Vietnam	7,916	2.40%
10	The Philippines	6,414	2.13%	South Africa	7,492	2.27%

Note:1. The data were updated to 15 Sept., 2023.

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

Source:China Customs

**TABLE 9:** June and July imports of herbicide formulations to China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
June	313,758	8.17	28,943	29.99
July	1,145,478	11.13	225,773	28.97
<b>Total</b>	<b>1,459,236</b>	<b>10.49</b>	<b>254,716</b>	<b>29.08</b>

Note:1. The data were updated to 15 Sept., 2023.

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

Source:China Customs





TABLE 10: Major origins of herbicide formulations imported to China, June–July 2023 vs June–July 2022

No.	June–July 2023			June–July 2022		
	Origin	Volume, tonne	Share	Origin	Volume, tonne	Share
1	Malaysia	891	61.05%	Germany	106	41.49%
2	Germany	167	11.43%	France	36	14.13%
3	India	116	7.94%	India	27	10.55%
4	Hungary	77	5.29%	Italy	22	8.72%
5	France	72	4.94%	Malaysia	19	7.36%
6	The US	56	3.81%	Indonesia	18	7.11%
7	Australia	38	2.62%	Japan	13	5.01%
8	Italy	24	1.66%	The UK	9	3.70%
9	Indonesia	18	1.26%	The US	5	1.93%

Note:1. The data were updated to 15 Sept., 2023.

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

Source:China Customs







## Brief news

### **Sichuan Hebang intends to build 200kt/a glyphosate production capacity in Indonesia**

On 28 Aug., Sichuan Hebang Biotechnology Co., Ltd. (Sichuan Hebang) held an online signing ceremony with PT BERKAH KAWASAN MANYAR SEJAHTERA (BKMS) and PT AKR Corporindo Tbk (AKR). The three parties signed a letter of intent for an USD800 million (RMB5.74 billion)-worth investment program, which would construct a chemical production base in the Java Integrated Industrial & Ports Estate (JIPE), Surabaya, East Java, Indonesia; the base will be used for the production of sodium carbonate, ammonium chloride, glyphosate, etc. According to the plan, production capacity for glyphosate is designed at 200,000 t/a.

Indonesia, one of the countries along the Belt and Road, is an important trade partner of China. The industrial estate JIPE, operated by BKMS, is Indonesia's first comprehensive industrial park with a deep seaport. JIPE was designated as a special economic zone by the Indonesian government in 2021.

### **Zhejiang releases third-batch list of chemical parks passed accreditation review**

On 1 Sept., the Economy and Information Technology Department of Zhejiang Province released the third-batch list of chemical parks that passed accreditation review in 2023, with nine parks on the list.



**TABLE 11:** Chemical parks passed accreditation review in Zhejiang Province in 2023 (third batch)

No.	Location	Name of the chemical park	Area, ha	Previous name of the chemical park
1	Ningbo City	Ningbo Economic and Technological Development Zone Chemical Industry Cluster	1,348.59	Ningbo Economic and Technological Development Zone
2		Yuyao City Chemical Industry Cluster	164.81	
3	Huzhou City	Wuxing Economic Development Zone (Daixi) Shangqiang Chemical Industrial Park	114.66	Daixi Town Shangqiang Chemical Concentration Area
4	Shaoxing City	Hangzhou Bay Shangyu Economic and Technological Development Zone Chemical Cluster	1,909.77	Hangzhou Bay Shangyu Economic and Technological Development Zone
5		Shaoxing Binhai New Area Modern Pharmaceutical Park	176.09	Shaoxing Modern Pharmaceutical High-tech Industrial Park
6		Zhejiang Shaoxing Binhai Industrial Park Chemical Industry Cluster	154.63	Shaoxing Keqiao Coastal Industrial Zone Chemical Industry Cluster
7		Xinchang High-Tech Industrial Park Chemical Park	94.58	Xinchang Economic Development Zone Damingshi New Area Chemical Industry Cluster
8	Jinhua City	Zhejiang Dongyang Economic Development Zone Life Health Industrial Park Hengdian Park	122.24	Dongyang Hengdian Chemical Industry Area
9		Zhejiang Dongyang Economic Development Zone Life Health Industrial Park Liuge Park	235.78	Dongyang City Liuge Pharmaceutical & Chemical Industry Cluster

Source: Economy and Information Technology Department of Zhejiang Province

### Jiangsu Chunjiang Runtian plans glufosinate-ammonium & glufosinate-p project

On 15 Sept., the Huai'an Ecological Environment Bureau publicised basic environmental impact assessment information of Jiangsu Chunjiang Runtian Agrochemical Co., Ltd. (Jiangsu Chunjiang Runtian)'s glufosinate-ammonium TC expansion and technological transformation project. The company plans to convert its existing production lines for methyldiethoxyphosphine products into 6,000 t/a glufosinate-ammonium production capacity, and upgrade the production technique adopted in the current 2,000 t/a glufosinate-ammonium line, plus transformation of supporting tank farm and warehouses. After completion, the company would boast new production capacity of 4,000 t/a glufosinate-p and 6,666 t/a glufosinate-ammonium 30% AS, along with by-product capacity of 6,300 t/a ammonium chloride, 5,800 t/a sodium chloride and 4,000 t/a ethyl alcohol.

### Xinji Alpha to construct 5,500 t/a bentazone and intermediate project

In Sept., Xinji Alpha Biotechnology Co., Ltd. (Xinji Alpha) revealed that it proposed to build a 5,500 t/a bentazone and intermediate project in Hebei Xinji High-tech Industrial Development Zone, Hebei Province. The project involves the construction of production lines of 2,000 t/a sulfamide, 1,500 t/a bentazone TC and 2,000 t/a bentazone AS; the investment totals USD13.93 million (RMB100million). To date,



Xinji Alpha has acquired recordation certificate and pollution discharge permit for the project; the company also holds pesticide registration certificates for bentazone TC and AS products.

Bentazone is a safe, selective, broad-spectrum post-emergence heterocyclic herbicide with quick effect. It is effective against 10+ noxious weeds and many common broadleaf weeds, and is extensively applicable on multiple crops, including rice, legumes, tuber crops, shallot, garlic, sugarcane, tea and numerous traditional Chinese herbs.

### **Weifang Nuchlor to build 1,300 t/a fluchloraminopyr TC capacity**

In late Aug., the Binhai Branch of the Bureau of Ecology and Environment of Weifang City approved the environmental impact report of Weifang Nuchlor Chemical Co., Ltd. (Weifang Nuchlor)'s 2,000 t/a fluroxypyr technological transformation project. Relying on the infrastructure and equipment of the existing 2,000 t/a fluroxypyr project, the company has planned to add new equipment and production capacity of 1,300 t/a fluchloraminopyr TC and at the same time maintain 2,000 t/a fluroxypyr capacity via improving production process. Total investment for the project is USD15.78 million (RMB113.29 million).

Founded in Sept. 2014, Weifang Nuchlor is a holding subsidiary of Shandong Luba Chemical Co., Ltd. (Shandong Luba). The parent company was established in Dec. 1997, now with registered capital hitting USD54.33 million (RMB390 million). Shandong Luba is an agrochemical conglomerate, its businesses covering pesticide TC synthesis, production of fine chemicals, formulations processing, product R&D and sales.

### **Hubei Zhongxun to build 600 t/a 3,4-difluorobenzonitrile line**

In late Aug., the Bureau of Ecology and Environment of Jingmen City announced that it was to approve the environmental impact report of Hubei Zhongxun Thinkgreen Technology Co., Ltd. (Hubei Zhongxun)'s 3,4-difluorobenzonitrile project. The company has planned to construct a new 600 t/a 3,4-difluorobenzonitrile production line and upgrade its production technique and equipment.

3,4-Difluorobenzonitrile is a key intermediate for the production of cyhalofop-butyl, a herbicide with high efficacy, low toxicity, low residue and sound selectivity. Cyhalofop-butyl is very safe for rice crops. It has good prevention and control effect against gramineous weeds including barnyard grass, *Leptochloa chinensis*, *Alopecurus aequalis* and *Agrostis alba*.

### **Anhui Red Sun plans to build 10,000 t/a glufosinate-p project**

On 11 Sept., the Bureau of Ecology and Environment of Chizhou City released the basic environmental impact assessment information of Anhui Red Sun Biochemistry Co., Ltd. (Anhui Red Sun)'s 10,000 t/a (2S)-2-amino-4-[hydroxy(methyl)phosphoryl]butanoic acid (also known as glufosinate-p) project for the first time. With investment totalling USD15.04 million (RMB108 million), the company plans to construct 10,000 t/a glufosinate-p production capacity, along with relevant supporting facilities. Glufosinate-p is a broad-spectrum, non-selective and contact herbicide.

Established on 24 April 2014, Anhui Red Sun is a subsidiary of Nanjing Red Sun Co., Ltd.





### **EI report of Hebei Veyong's glufosinate-ammonium & glufosinate-p phase I project approved**

On 15 Sept., the Bureau of Administrative Examination and Approval of Shijiazhuang High-tech Industrial Development Zone approved the environmental impact (EI) report of Hebei Veyong Bio-Chemical Co., Ltd. (Hebei Veyong)'s 1,000 t/a glufosinate-ammonium technological transformation and 10,000 t/a glufosinate-p project (phase I). Once the project is completed, Hebei Veyong will have 18,348.6 t/a production capacity for glufosinate-p SL, and its capacity for glufosinate-ammonium products remain unchanged.

### **Shandong Eshung plans to expand glufosinate-ammonium capacity to 35,000 t/a**

On 13 Sept., the Jinxiang County People's Government publicised the second-time environmental impact assessment information of Shandong Eshung Industrial Co., Ltd. (Shandong Eshung)'s phase I program of its 35,000 t/a glufosinate-ammonium transformation and expansion and 10,000 t/a insecticide project.

According to the company's plan, the phase I program will expand its glufosinate-ammonium capacity from the existing 21,000 t/a to 35,000 t/a, and the phase II program build production lines for two insecticides—5,000 t/a chlorantraniliprole and 5,000 t/a cyantraniliprole.

### **Dhanuka launches herbicide Tizom (halosulfuron-methyl-metribuzin WG) in three Indian states**

In Sept., Dhanuka Agritech Limited (Dhanuka), an Indian agrochemical enterprise, rolled out Tizom, a new herbicide co-developed with Nissan Chemical Corporation, in Karnataka, Maharashtra and Tamil Nadu states in India. Tizom, in WG form with active ingredients halosulfuron-methyl (6%) and metribuzin (50%), boasts good prevention and control effects against narrowleaf weeds, broadleaf weeds and sedge weeds in sugarcane fields, and thus would help raise the income of sugarcane farmers. The company will introduce the product to other states in the future.





## Price update

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

TABLE 12: Ex-works prices of key herbicide raw materials in China, 8 Sept., 2023

Raw Materials	20230808		20230908	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	11,650	1,634.33	12,000	1,671.59
92% Iminodiacetonitrile	8,600	1,206.46	8,600	1,197.97
99% Isopropylamine	9,550	1,339.73	9,550	1,330.31
98% N-(Phosphonmethyl) Iminodiacetic acid	19,700	2,763.63	18,500	2,577.03
99% Phosphorus trichloride	6,410	899.23	6,730	937.48
99.9% Pyridine	18,500	2,595.29	19,200	2,674.54

Note: Ex-works price includes VAT.

Source: CCM

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







TABLE 13: Ex-works prices of main herbicides in China, 8 Sept., 2023

Product	20230808		20230908	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	13,188	1,850.09	13,700	1,908.4
92% Acetochlor technical	29,000	4,068.29	28,500	3,970.02
97% Atrazine technical	36,000	5,050.29	32,600	4,541.15
96% Bensulfuron-methyl technical	160,000	22,445.74	160,000	22,287.85
92% Butachlor technical	22,000	3,086.29	22,000	3,064.58
95% Clomazone technical	104,000	14,589.73	101,000	14,069.2
95% Cyhalofop-butyl technical	129,000	18,096.88	123,000	17,133.78
97% Diuron technical	38,000	5,330.86	38,000	5,293.36
98% Fenclorim technical	105,000	14,730.02	105,000	14,626.4
95% Fenoxaprop-P-ethyl technical	154,000	21,604.03	154,000	21,452.05
96% Fluroxypyr technical	108,000	15,150.88	100,000	13,929.9
95% Fomesafen technical	133,900	18,784.28	133,900	18,652.14
95% Glufosinate ammonium technical	62,500	8,767.87	62,100	8,650.47
95% Glyphosate technical	35,800	5,022.24	32,500	4,527.22
95% Haloxyfop-P-methyl technical	139,000	19,499.74	126,300	17,593.47
97% Metolachlor technical	50,000	7,014.3	45,000	6,268.46
95% Metsulfuron-methyl technical	135,000	18,938.6	135,000	18,805.37
95% Nicosulfuron technical	193,000	27,075.18	188,000	26,188.22
97% Oxyfluorfen technical	150,000	21,042.89	148,000	20,616.26
95% Pendimethalin technical	61,500	8,627.58	60,500	8,427.59
95% Pretilachlor technical	32,800	4,601.38	32,800	4,569.01
97% Pyrazosulfuron-ethyl technical	225,000	31,564.33	225,000	31,342.29





80% Quinclorac technical	133,000	18,658.03	133,000	18,526.77
95% Quizalofop-P-ethyl technical	192,500	27,005.04	192,500	26,815.07
95% Tribenuron-methyl technical	92,150	12,927.35	87,300	12,160.81
95% Trifluralin technical	40,500	5,681.58	40,500	5,641.61

Note: Ex-works price includes VAT.

Source: CCM

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





TABLE 14: Shanghai port prices of main herbicides in China, 8 Sept., 2023

Product	20230808		20230908	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	13,688	1,920.23	14,200	1,978.05
92% Acetochlor technical	29,500	4,138.43	29,000	4,039.67
97% Atrazine technical	36,500	5,120.44	33,100	4,610.8
96% Bensulfuron-methyl technical	160,500	22,515.89	160,500	22,357.5
92% Butachlor technical	22,500	3,156.43	22,500	3,134.23
95% Clomazone technical	104,500	14,659.88	101,500	14,138.85
95% Cyhalofop-butyl technical	129,500	18,167.02	123,500	17,203.43
97% Diuron technical	38,500	5,401.01	38,500	5,363.01
98% Fenclorim technical	105,500	14,800.16	105,500	14,696.05
95% Fenoxaprop-P-ethyl technical	154,500	21,674.17	154,500	21,521.7
96% Fluroxypyr technical	108,500	15,221.02	100,500	13,999.55
95% Fomesafen technical	134,400	18,854.43	134,400	18,721.79
95% Glufosinate ammonium technical	63,000	8,838.01	62,600	8,720.12
95% Glyphosate technical	36,300	5,092.38	33,000	4,596.87
95% Haloxyfop-P-methyl technical	139,500	19,569.88	126,800	17,663.12
97% Metolachlor technical	50,500	7,084.44	45,500	6,338.11
95% Metsulfuron-methyl technical	135,500	19,008.74	135,500	18,875.02
95% Nicosulfuron technical	193,500	27,145.32	188,500	26,257.87
97% Oxyfluorfen technical	150,500	21,113.03	148,500	20,685.91
95% Pendimethalin technical	62,000	8,697.73	61,000	8,497.24
95% Pretilachlor technical	33,300	4,671.52	33,300	4,638.66
97% Pyrazosulfuron-ethyl technical	225,500	31,634.47	225,500	31,411.94





80% Quinclorac technical	133,500	18,728.17	133,500	18,596.42
95% Quizalofop-P-ethyl technical	193,000	27,075.18	193,000	26,884.72
95% Tribenuron-methyl technical	92,650	12,997.49	87,800	12,230.46
95% Trifluralin technical	41,000	5,751.72	41,000	5,711.26

*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 Sept., 2023





TABLE 15: FOB Shanghai prices of main herbicides in China, 8 Sept., 2023, USD/t

Product	20230808	20230908
98% 2,4-D technical	1,884.44	1,943.82
92% Acetochlor technical	4,059	3,960.95
97% Atrazine technical	4,890.39	4,397.37
96% Bensulfuron-methyl technical	21,951.89	21,797.47
92% Butachlor technical	3,127.17	3,105.17
95% Clomazone technical	14,325.04	13,813.95
95% Cyhalofop-butyl technical	17,085.45	16,176.18
97% Diuron technical	5,297.16	5,259.89
98% Fenclorim technical	14,449.52	14,347.87
95% Fenoxaprop-P-ethyl technical	21,136.65	20,987.96
96% Fluroxypyr technical	14,826.71	13,631.86
95% Fomesafen technical	18,410.53	18,281.02
95% Glufosinate ammonium technical	8,277.83	8,167
95% Glyphosate technical	5,434.48	4,898.83
95% Haloxyfop-P-methyl technical	19,073	17,208.44
97% Metolachlor technical	6,972.69	6,231.28
95% Metsulfuron-methyl technical	18,566.05	18,435.45
95% Nicosulfuron technical	26,452.12	25,585.57
97% Oxyfluorfen technical	19,845.56	19,443.21
42% Paraquat TK	3,053.78	3,210
95% Pendimethalin technical	8,534.15	8,336.32
95% Pretilachlor technical	4,618.19	4,585.7
97% Pyrazosulfuron-ethyl technical	30,826.79	30,609.94





80% Quinclorac technical	18,278.95	18,150.37
95% Quizalofop-P-ethyl technical	26,383.59	26,197.99
95% Tribenuron-methyl technical	12,666.05	11,915.01
95% Trifluralin technical	5,488.11	5,449.5

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

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