

Herbicides China Monthly Report 202303

Issue 3 March 30 2023





Contents

Headline	1
Editor's note	3
Company dynamics	4
Jingbo Agrochem's nicosulfuron TC & topramezone TC production lines completed	4
Zhangye Dagong's 3kt/a mesotrione TC line passes acceptance check	5
Hangzhou Nutrichem's imazapyr TC line starts trial production	6
Market analysis	8
Patent for pyroxasulfone to expire in China	8
Prices of most herbicides TC drop in early March	8
Prices of glufosinate-ammonium TC & glyphosate TC plunge in late March	10
Policy	12
2023 Government Work Report: grain acreage stabilised, soybean & oil crops planting expanded	12
Registration	14
67 Herbicide TC products approved of registration renewal in early March	14
Paraquat and pyridine	18
Prices of paraquat and pyridine decrease in China in March	18
Nanjing Red Sun: stable production & sales of main products in Q1	19
Trade analysis	21
China's atrazine TC exports stays above 60kt in 2022	21
Brief news	26
Shaoxing BSM sees big revenue growth in 2022	26
Jiangsu reinforces rules on chemical park accreditation	26
Huludao Zaidayingjia to build capacity for two pesticide intermediates	26
Gansu Beida's pesticide & fine chemical project breaks ground	27
Hubei releases safety risk review results of chemical parks across the province	27
Albaugh acquires Corteva's glyphosate business	28
NATESC unveils National Monitoring Report on Pesticide Resistance of Harmful Organisms	28
EI report of Shenyang Sciencreat's mesotrione expansion project to be approved	29
Sino-Agri Red Sun announces a ban on unauthorised exports	29
Jiangsu Yangnong reports big growth in revenue	30
Price Update	31
Ex-works prices of key herbicide raw materials in China, 8 March, 2023	31
Ex-works prices of main herbicides in China, 8 March, 2023	31
Shanghai port prices of main herbicides in China, 8 March, 2023	33
FOB Shanghai prices of main herbicides in China, 8 March, 2023	35





Headline

Jingbo Agrochem's newly-built 2,000 t/a nicosulfuron TC and 1,000 t/a topramezone TC production lines have been put into trial operation.

Zhangye Dagong organised an environmental protection acceptance check upon project completion for its 3,000 t/a mesotrione TC production line and the supporting facilities. The expert panel agreed that the project could get a pass. With this, Zhangye Dagong will come more competitive in the mesotrione TC market.

Hangzhou Nutrichem has finished the construction of 1,000 t/a imazapyr TC production line and supporting facilities. The line has been put into trial production.

In China, the compound patent for pyroxasulfone went off-patent from Feb. 2022, but another important patent for pyroxasulfone is still valid. Therefore, pesticide registration rush for pyroxasulfone products has not come yet, and pyroxasulfone products in Chinese market are rarely seen. Development space for pyroxasulfone is large in China, as soil treatment can greatly boost labour efficiency in the era that China starts to experience rural labour shortage.

In early- and mid-March, the majority of herbicides TC saw their ex-works price go down, while some products had stable price. Organophosphorus herbicides had big price falls.

In late March, glufosinate-ammonium TC and glyphosate TC saw their ex-works prices dive, and the prices of bensulfuron-methyl TC, metolachlor TC, diquat TK and diuron TC also slipped. However, the price of florasulam TC edged up a little.

On 5 March, Chinese Premier Li Keqiang delivered the 2023 Government Work Report at the first session of the 14th NPC held in Beijing. The report mentioned that in the past five years, China had improved the overall agricultural production capacity, stabilised and expanded total grain acreage, increased planting area of soybean and oil crops, optimised pattern and layout of agricultural production, and elevated per unit yield and quality of agro-products.

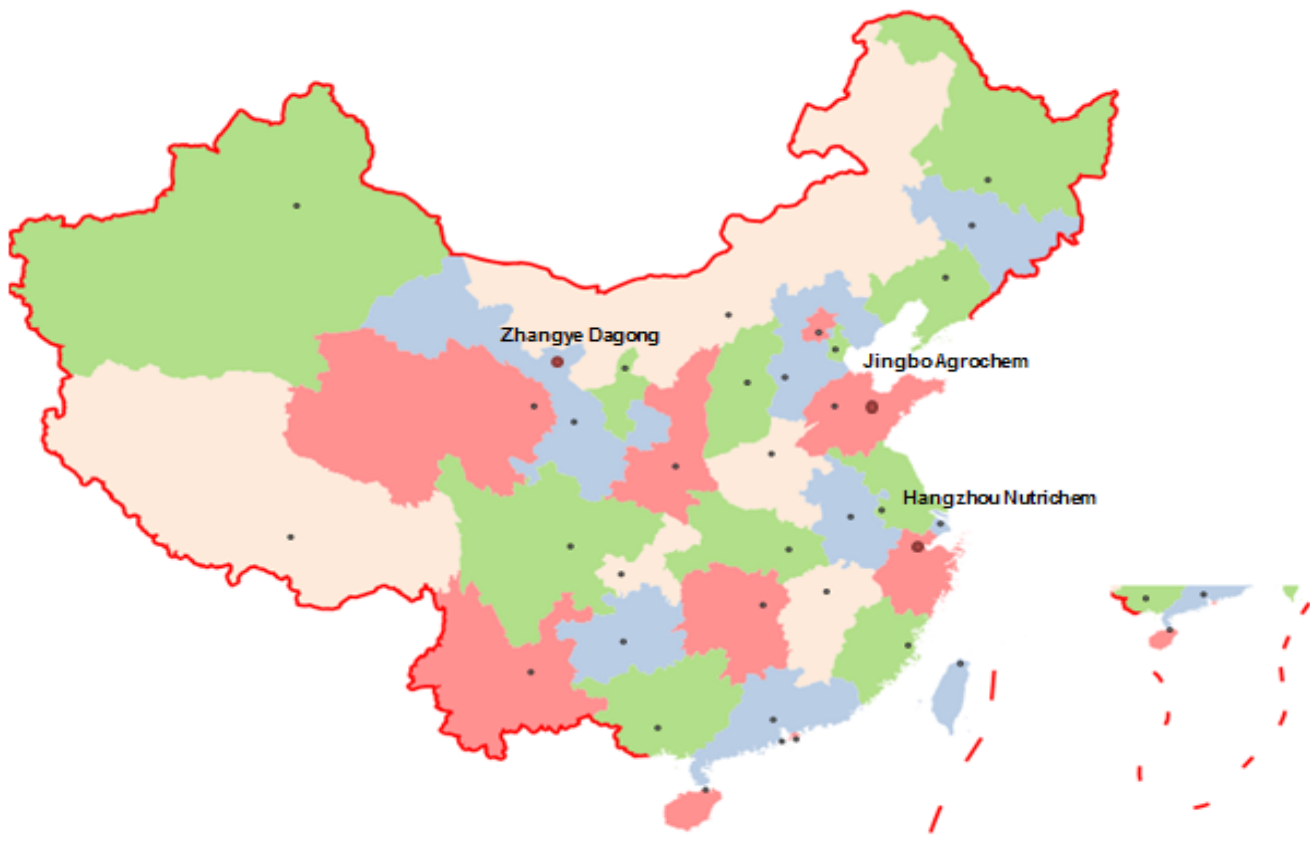
In early March 2023, the Department of Agrochemical Management of MARA released a batch of products obtained registration renewal approval, which include 377 herbicide products, of which 67 are herbicide TC products.

In early March, the FOB price of paraquat 42% TK in China dropped by 2.49% MoM, and the ex-works price of pure pyridine dived 13.30% MoM.

On 14 March, Nanjing Red Sun revealed some information on its R&D progress, production, management, etc.

In 2022, atrazine products from China were mainly exported to Brazil, the US, Argentina, Nigeria, Mexico, etc. Specifically, China's atrazine TC export stayed above 60,000 tonnes.







Editor's note

In March, ex-works prices of most herbicides TC continued to drop due to weak downstream market. And in late March, organophosphorus herbicides glufosinate-ammonium TC and glyphosate TC, in particular, saw their ex-works prices dive; the prices of bensulfuron-methyl TC, metolachlor TC, diquat TK and diuron TC also slipped, while the price of florasulam TC edged up a little. It is expected that the general downtrend would last for a while, as off-season for herbicides TC is about to come, and demand is hard to recover in the short term.

As to company dynamics, Jingbo Agrochem's newly-built nicosulfuron TC and topramezone TC production lines have been put into trial operation. Zhangye Dagong's 3,000 t/a mesotrione TC production line and the supporting facilities have passed the company-organised environmental protection acceptance check upon project completion. Hangzhou Nutrichem's imazapyr TC line has also come into trial production.

Regarding policies, expanding the planting area of soybean and oil crops was mentioned at the press conference on 2022 China's agricultural and rural economic performance held in Jan. 2023. Soybean growing will continue to be supported by government policies and an addition of at least 0.67 million ha is expected.

China has been promoting industrial application of breeds cultivated via biological technologies and accelerating the industrialisation of genetically modified crops. On 3 Feb., 2023, MARA published the *Implementation Opinions on Carrying out the Major Tasks in Comprehensively Boosting Rural Revitalisation in 2023 Outlined by the Central Committee of the Communist Party of China and the State Council*. It stated that the government should accelerate industrialisation of breeds thus cultivated, further increase pilot programs for industrial application of genetically modified maize and soybean varieties, and strengthen supervision on these practices as required by related laws and regulations. On 21 Feb., NATESC released the *Notice of Applying for National Unified Experiment for Genetically Modified Maize and Soybean Strains*, which announced to set up unified experiment for such maize and soybean breeds in 2023. From a long-term perspective, facilitating the development of biological breeding industry will benefit herbicides, such as glufosinate-ammonium and glyphosate, that are suitable for genetically modified crops. Let's wait and see how the industry will develop in the future.

The USD/CNY exchange rate in this newsletter is USD1.00 = CNY6.9400 on 1 March, 2023, sourced from the People's Bank of China. All the prices mentioned in this newsletter will include the VAT, unless otherwise specified.





Company dynamics

Jingbo Agrochem's nicosulfuron TC & topramezone TC production lines completed

Summary: Jingbo Agrochem's newly-built 2,000 t/a nicosulfuron TC and 1,000 t/a topramezone TC production lines have been put into trial operation.

In March, CCM learned from Jingbo Agrochemicals Technology Co., Ltd. (Jingbo Agrochem) that its 3,000 t/a high-efficacy herbicide TC project had been completed. The project involves 2,000 t/a nicosulfuron TC and 1,000 t/a topramezone TC production equipment and supporting facilities. The lines came into trial run on 12 Feb., 2023. According to Jingbo Agrochem's planning, along with the operation of the 3,000 t/a new capacity, its previously active 900 t/a nicosulfuron TC and 100 t/a topramezone TC lines in the same plant will soon go out of service.

Jingbo Agrochem is one of the key pesticide enterprises in China, with its overall strengths at the upper-middle level nationwide. The company engages in R&D, production and sale of pesticides. It has stayed on the list of Top 100 China Pesticide Enterprises (By Sales), which is released by the China Crop Protection Industry Association (CCPIA) every year, for multiple years in a row; it ranked 38th on the list for 2022.

The company's headquarters and production plant is located in the Chemical Concentration Area of Boxing County, Binzhou City, Shandong Province. It is the same plant that now accommodates its newly-built 3,000 t/a production lines and the 1,000 t/a old lines for nicosulfuron TC & topramezone TC. Aiming for its long-term development, Jingbo Agrochem has launched many projects in recent years, and this plant in Boxing County has seen its production capacity expand. At present, the plant also has active capacity for quizalofop-P-ethyl TC, mepanipyrim TC, tebufenozide TC, kresoxim-methyl TC, emamectin benzoate TC, fenoxanil TC, indoxacarb TC, diflubenzuron TC, pyrimethanil TC, boscalid TC, flonicamid TC, metaflumizone TC, lufenuron TC, azoxystrobin TC, trifloxystrobin TC and pesticide formulations.

Yet a company having a pesticide TC production line set up does not mean it can have the product legally circulated in the market. Before that sale, the company has to acquire necessary qualifications, pesticide registration certificate included.

So far, Jingbo Agrochem has obtained 25 registration certificates for pesticide TC products and 121 certificates for pesticide formulation products. But unfortunately, it does not hold a valid certificate for topramezone TC yet, even though it had a 100 t/a topramezone TC line before. It should still put some efforts in gaining all the qualifications required before selling the product to other companies.

It is worth noting that on 17 Nov., 2022, Jingbo Agrochem's application for pesticide registration of a 97% topramezone TC product passed provincial-level preliminary review. The preliminary assent document, along with other necessary materials, was then submitted to the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA). Relevant policies require that upon receipt of the application materials and preliminary examination opinions submitted by the agricultural authorities at the provincial level, MARA shall complete technical examinations on the chemistry, toxicity, environment impact, label sample, etc. of the product, give examination





opinions, and submit them to the Pesticide Registration Review Committee for a final decision. It is thus concluded that there exist a large probability that Jingbo Agrochem will have a topramezone TC registration certificate later this year.

Zhangye Dagong's 3kt/a mesotrione TC line passes acceptance check

Summary: Zhangye Dagong organised an environmental protection acceptance check upon project completion for its 3,000 t/a mesotrione TC production line and the supporting facilities. The expert panel agreed that the project could get a pass. With this, Zhangye Dagong will come more competitive in the mesotrione TC market.

Early this month, CCM learned from Zhangye Dagong Pesticide Chemistry Co., Ltd. (Zhangye Dagong) that it had already carried out a company-organised environmental protection acceptance check upon project completion for the 3,000 t/a mesotrione TC production line and the supporting facilities, and the expert panel had decided to give a pass. This expansion project is a key move for Zhangye Dagong. It previously had a 240 t/a mesotrione TC line in its plant in the Circular Economy Demonstration Park, Zhangye Economic and Technological Development Zone, Zhangye City, Gansu Province. As the new large-scale line was put into operation, the company dismantled the old one.

It should be noted that according to its original plan, Zhangye Dagong would have a 1,200 t/a 1,3-cyclohexanedione line and a 2,600 t/a 1-methyl-4-methylsulfonylbenzene line built along with the mesotrione line. But it later cancelled these two supporting lines at the construction stage.

Located in northwestern China, Zhangye Dagong has engaged itself in mesotrione business for many years, and built up its influence in the mesotrione TC market. Moreover, it has developed competitive mesotrione formulation series. Currently, the company holds pesticide registration certificates for eight mesotrione formulation products: mesotrione·nicosulfuron·atrazine 35% OD, mesotrione 20% OD, mesotrione 40% SC, mesotrione·nicosulfuron 25% OD, mesotrione·penoxsulam 16% OD, mesotrione·atrazine 55% SC, mesotrione 10% OD and mesotrione·butralin 28% SE.

Mesotrione is a high-efficacy, safe and eco-friendly triketone herbicide with quite broad weed control spectrum and strong herbicidal activity. It has relatively good effects on gramineous, broadleaf and sedge weeds. Mesotrione has been widely promoted in controlling weeds in maize field. Although it was put on the pesticide market long before, it still attracted many attentions of Chinese pesticide producers in recent years. The total capacity of mesotrione TC expanded quickly in China in the past few years.

At present, major active mesotrione TC producers in China are: Shandong Binnong Technology Co., Ltd., Shangyu Nutrichem Co., Ltd., Jiangsu Youjia Crop Protection Co., Ltd., Shenyang Sciencreat Chemicals Co., Ltd., Inner Mongolia Zhonggao Chemical Co., Ltd., Anhui Zhongshan Chemical Co., Ltd., Limin Chemical Co., Ltd., Liaoning Longtian Chemical Technology Co., Ltd. and Hubei Guangfulin Biological Products Co., Ltd. This time, with the successful expansion project, Zhangye Dagong will come more competitive in this market.

Many more pesticide companies are joining the market. Pesticide manufacturers like Jiangsu Fengshan Group Co., Ltd., Jiangsu Changqing Agrochemical Co., Ltd., Yongnong BioSciences Co., Ltd. and Gansu Ruidong Chemical Co., Ltd. have announced their





investment plans. It is inevitable the future mesotrione TC market will see stiff competition, as domestic capacity keeps increasing.

Attention should also be paid to another triketone herbicide, tembotrione, a darling in today's Chinese pesticide market. The compound patent for this active ingredient expired in Sept. 2019, and then domestic pesticide producers began to set foot in this market. Tembotrione projects are being constructed and many more plans are announced; the production capacity of tembotrione in China will grow fast.

In the short term, tembotrione will have little impact on mesotrione market. Yet it should be remembered that tembotrione is believed to be the biggest rival to mesotrione, and the former has scored higher on safety and herbicidal activity than the latter, and thus may snatch larger market share.

Hangzhou Nutrichem's imazapyr TC line starts trial production

Summary: Hangzhou Nutrichem has finished the construction of 1,000 t/a imazapyr TC production line and supporting facilities. The line has been put into trial production.

In March, CCM learned from Hangzhou Nutrichem Co., Ltd. (Hangzhou Nutrichem) that it had finished the construction of 1,000 t/a imazapyr TC production line and supporting facilities, and put them into trial operation. This line is an integral part of the company's novel pesticide upgrading project. Other production capacity planned in this project includes 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; these lines are either under construction or yet to construct.

Currently, Hangzhou Nutrichem has active production capacity of 2,000 t/a propisochlor TC, 5,000 t/a pretilachlor TC, 7,000 t/a metolachlor TC, 3,000 t/a acetochlor TC, 3,000 t/a S-metolachlor TC and large-scale lines for pesticide formulations. Moreover, the company has proposed a 15,000 t/a S-metolachlor technological transformation project. Once this new project is built up and successfully brought into production, its S-metolachlor TC capacity will be expanded to 15,000 t/a, with the old 3,000 t/a phased out.

Hangzhou Nutrichem was acquired by Nutrichem Co., Ltd. (Nutrichem) in 2013. It was formerly known as Hangzhou Qingfeng Agrochemical Co., Ltd., established in 1957, an early comer in the pesticide industry in China. After it became a subsidiary of Nutrichem, it eliminated all the old production equipment in the plant in the Linjiang Industrial Park of Hangzhou Dajiangdong Industrial Cluster Zone, Hangzhou City, Zhejiang Province, and started a transformation & upgrade journey with the support of the parent company, following Nutrichem's overall development strategy. Its new plant is now located in the Hangzhou Linjiang High-tech Industrial Park, Qiantang New Area, Hangzhou City, Zhejiang Province.

The parent company, Nutrichem, has built itself into one of the leading pesticide conglomerates in China. It once had a big pesticide production base—Yancheng South Chemicals Co., Ltd. (Yancheng Southchem) in Xiangshui Ecological Chemical Park, Yancheng City, Jiangsu Province. Yet the severe explosion in Xiangshui on 21 March 2019 greatly impacted chemical enterprises there, and Yancheng





Southchem has closed the plant in the Xiangshui Ecological Chemical Park.

Before Yancheng Southchem's withdrawal from the park in Xiangshui, it was a major imazapyr TC supplier in China's pesticide market. It previously had capacity of 500 t/a lambda-cyhalothrin TC, 500 t/a bifenthrin TC, 700 t/a imazapyr TC, 200 t/a imazapic TC, 300 t/a imazaquin TC, 200 t/a imazethapyr TC, 300 t/a flufenacet TC, 500 t/a diafenthion TC, 500 t/a metribuzin TC, 200 t/a thiodicarb TC, 1,200 t/a clethodim TC, 1,500 t/a tebuthiuron TC, 100 t/a orthosulfamuron TC, 200 t/a bis(2,6-diisopropylphenyl)carbodiimide and 500 t/a pyridine derivatives in that park. The company also boasted a lot of intangible assets such as production processes for multiple pesticides, pesticide brands and pesticide registration resources.

Later the production equipment, production processes, pesticide brands and pesticide registration resources of Yancheng Southchem were transferred to Nutrichem and other subsidiaries of Nutrichem based on their needs. Hangzhou Nutrichem is one of the beneficiaries. In fact, Hangzhou Nutrichem received a large portion of Yancheng Southchem's valuable assets, which facilitated the completion of this 1,000 t/a imazapyr TC production line. Besides, its pesticide registration of imazapyr TC (Registration NO. PD20110618) was transferred from Yancheng Southchem.

Along with this trial production of Hangzhou Nutrichem's imazapyr TC line, supply of the product in the market will be boosted. Imazapyr TC capacity in China may increase further in the near future, as Liaoning Cynda Chemical Co., Ltd. has released a plan to build 1,000 t/a imazapyr TC capacity; the project will be settled in its plant in the Chemical Industrial Park of Huludao Economic Development Zone, Huludao City, Liaoning Province.





Market analysis

Patent for pyroxasulfone to expire in China

Summary: In China, the compound patent for pyroxasulfone went off-patent from Feb. 2022, but another important patent for pyroxasulfone is still valid. Therefore, pesticide registration rush for pyroxasulfone products has not come yet, and pyroxasulfone products in Chinese market are rarely seen. Development space for pyroxasulfone is large in China, as soil treatment can greatly boost labour efficiency in the era that China starts to experience rural labour shortage.

As of March 2023, the patents for pyroxasulfone have expired in Germany, South Korea and Taiwan Province of China. In mainland China, though the compound patent went off-patent from Feb. 2022, another important patent for pyroxasulfone is still valid and will expire on 31 July, 2023.

Pyroxasulfone, developed and industrialised by Kumiai Chemical Industry Co., Ltd. and Ihara Chemical Industry Co., Ltd., is a broad-spectrum novel soil treatment agent with high herbicidal activity, high efficacy and safety. It is widely used in countries such as the US, Canada, Australia and New Zealand, which has brought the global pyroxasulfone market into USD100 million-sales-club. In China, its application prospect on crops like wheat, maize, soybean, cotton, sunflower, potato and peanut is quite promising.

Currently, only Shanghai Qunli Chemical Co., Ltd. has acquired valid registration for pyroxasulfone TC product in China. As concerns the supply of pyroxasulfone TC, as far as CCM knows, there is no regular domestic supplier. But Inner Mongolia Nab Technology Co., Ltd. has a 500 t/a pyroxasulfone TC production line under construction; the line is projected to be built up in Feb. 2025.

Unlike in overseas markets, few pyroxasulfone products are available in Chinese market, while acetochlor products, competitive rivals, can be found more easily. Along with expiry of the related pyroxasulfone patents in China, as well as active promotion by potential suppliers, greater development opportunities lie ahead in China for pyroxasulfone products. In general, it is believed that pyroxasulfone will gradually take the place of acetochlor for weed control in wheat, maize and soybean fields.

Prices of most herbicides TC drop in early March

Summary: In early- and mid-March, the majority of herbicides TC saw their ex-works price go down, while some products had stable price. Organophosphorus herbicides had big price falls.

In early March, the majority of herbicides TC saw their ex-works price go down, while atrazine TC, ametryn TC, quizalofop-P-ethyl TC, acetochlor TC, florasulam TC and diuron TC had stable price.

In this period, triazine herbicides had stable price. Of sulfonylurea herbicides, the ex-works price of quizalofop-P-ethyl TC did not change much, staying at USD32,061/t (RMB222,500/t), while the prices of bensulfuron-methyl TC and nicosulfuron TC kept falling. On a monthly basis, bensulfuron-methyl TC price slipped by 2.14% to USD26,369/t (RMB183,000/t); nicosulfuron TC price decreased by 6.82% to USD29,539/t (RMB205,000/t), a rate bigger than last month.





The prices of amide herbicides were lowered only slightly, as there was a rigid demand. The price of Acetochlor TC stopped the previous fall, and the prices of pretilachlor TC and metolachlor TC dipped 0.59% and 1.74% MoM, respectively. For organophosphorus herbicides, however, greater price declines were witnessed. The prices of glufosinate-ammonium TC and glyphosate TC plunged 10.54% and 13% MoM, respectively.

Ex-works prices of florasulam TC and diuron TC remained stable. The price of diquat TK continued the downtrend, reducing 2.22% MoM to USD6,340/t (RMB44,000/t).

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

Category	Product	Content of active ingredient	Ex-works price in early March, RMB/t	USD/t	MoM change based on RMB
Triazine herbicides	Atrazine TC	97%	36,000	5,187.32	Basically flat
	Ametryn TC	95%	45,000	6,484.15	Basically flat
Sulfonylurea herbicides	Nicosulfuron TC	95%	205,000	29,538.90	Down
	Quizalofop-P-ethyl TC	95%	222,500	32,060.52	Basically flat
	Bensulfuron-methyl TC	96%	183,000	26,368.88	Down
Amide herbicides	Pretilachlor TC	95%	33,800	4,870.32	Down
	Acetochlor TC	92%	35,000	5,043.23	Basically flat
	Metolachlor TC	97%	56,400	8,126.80	Down
Organophosphorus herbicides	Glufosinate-ammonium TC	95%	130,700	18,832.85	Down
	Glyphosate TC	95%	41,700	6,008.65	Down
Triazol[1,5-a]pyrimidine-2-sulfonamide herbicides	Florasulam TC	98%	510,000	73,487.03	Basically flat
Bipyridinium herbicides	Diquat TK	40%	44,000	6,340.06	Down
Substituted phenylurea herbicides	Diuron TC	97%	48,000	6,916.43	Basically flat





Source:CCM

Prices of glufosinate-ammonium TC & glyphosate TC plunge in late March

Summary: In late March, glufosinate-ammonium TC and glyphosate TC saw their ex-works prices dive, and the prices of bensulfuron-methyl TC, metolachlor TC, diquat TK and diuron TC also slipped. However, the price of florasulam TC edged up a little.

Compared with early March, late March witnessed price drop in about a half of the major products investigated as well as steadiness in another half. Of them, organophosphorus herbicides glufosinate-ammonium TC and glyphosate TC saw big declines in ex-works price, and bensulfuron-methyl TC, metolachlor TC, diquat TK and diuron TC experienced price dips. Florasulam TC was the only product reported price increase, and the rest had stable price.

In late March, triazine herbicides maintained stable price. Of sulfonyleurea herbicides, ex-works prices of nicosulfuron TC and quizalofop-P-ethyl TC had little change, while the price of bensulfuron-methyl TC kept falling, slipping by another 1.64% to USD25,937/t (RMB180,000/t) from the early-March level.

Of amide herbicides, acetochlor TC price kept stable, pretilachlor TC price stopped falling, but metolachlor TC price dropped by 2.48% from the price recorded in early March. For organophosphorus herbicides, great price declines continued. The price of glufosinate-ammonium TC plummeted 22.04% to USD14,683/t (RMB101,900/t) and that of glyphosate TC reduced by 7.19% to USD5,576/t (RMB38,700/t).

The ex-works price of florasulam TC recovered to USD74,928/t (RMB520,000/t), up 1.96% on a half-month basis. The price of diquat TK continued the downtrend, falling by 4.55%, and the price of diuron TC dwindled 2.29%.





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

Category	Product	Content of active ingredient	Ex-works price in late March, RMB/t	USD/t	Change over early March (based on RMB price)
Triazine herbicides	Atrazine TC	97%	36,000	5,187.32	Basically flat
	Ametryn TC	95%	45,000	6,484.15	Basically flat
Sulfonylurea herbicides	Nicosulfuron TC	95%	205,000	29,538.90	Basically flat
	Quizalofop-P-ethyl TC	95%	222,500	32,060.52	Basically flat
	Bensulfuron-methyl TC	96%	180,000	25,936.60	Down
Amide herbicides	Pretilachlor TC	95%	33,800	4,870.32	Basically flat
	Acetochlor TC	92%	35,000	5,043.23	Basically flat
	Metolachlor TC	97%	55,000	7,925.07	Down
Organophosphorus herbicides	Glufosinate-ammonium TC	95%	101,900	14,683.00	Down
	Glyphosate TC	95%	38,700	5,576.37	Down
Triazolo[1,5-a]pyrimidine-2-sulfonanilide herbicides	Florasulam TC	98%	520,000	74,927.95	Up
Bipyridinium herbicides	Diquat TK	40%	42,000	6,051.87	Down
Substituted phenylurea herbicides	Diuron TC	97%	46,900	6,757.93	Down

Source:CCM





Policy

2023 Government Work Report: grain acreage stabilised, soybean & oil crops planting expanded

Summary: On 5 March, Chinese Premier Li Keqiang delivered the 2023 Government Work Report at the first session of the 14th NPC held in Beijing. The report mentioned that in the past five years, China had improved the overall agricultural production capacity, stabilised and expanded total grain acreage, increased planting area of soybean and oil crops, optimised pattern and layout of agricultural production, and elevated per unit yield and quality of agro-products.

On 5 March, Chinese Premier Li Keqiang delivered the 2023 Government Work Report at the opening meeting of the first session of the 14th National People's Congress (NPC) at the Great Hall of the People in Beijing.

The report mentioned that in the past five years, China had improved the overall agricultural production capacity and strived to ensure national food security. Specifically, the country had stabilised and expanded total grain acreage, increased planting area of soybean and oil crops, optimised pattern and layout of agricultural production, and elevated per unit yield and quality of agro-products. The government had improved supportive policies for grain production, maintained subsidies to grain growers, set reasonable minimum purchasing prices for rice and wheat, increased rewards to big grain-growing counties, strengthened policy-supported agricultural insurance system, and promoted the construction of national food security industry belt. During this period, innovation, popularisation and application of technologies in seed industry, agricultural machinery, etc. had been speeded up, and the overall level of mechanisation in ploughing, sowing, and harvesting processes had been brought up to 73% from the previous 67%.

As regards eco-environment protection, the five years had seen increased efforts into prevention & control of soil contamination risks as well as into restoration work, and enhanced treatment of solid wastes and emerging pollutants. The red lines of arable land and permanent basic farmland, and of ecological protection and the boundaries of urban development had been determined. River & lake director system and forest director system had been established and implemented. The principle of integrated protection and systematic management of mountains, rivers, forests, fields, lakes, grasses and sand had been followed, and a batch of major projects of biodiversity conservation were carried out.

It should be noted that at the press conference on 2022 China's agricultural and rural economic performance held earlier this year, planting expansion of soybean and oil crops was also mentioned. In 2023, soybean growing will continue to be supported by favourable policy, and an addition of 0.67 million ha in soybean planting area at minimum is the goal to be fought for.

The conference briefly reviewed China's efforts on expanding the planting area of soybean and oil crops in 2022.

- Soybean: A suitable crop rotation system was set up. Maize-soybean rotation was mainly practised in Northeast China, a traditional soybean producing region. In some selected areas in Northwest China, Huang-Huai-Hai region, Southwest China and middle & lower reaches of the Yangtze River, maize-soybean strip intercropping was for the first time promoted on a large scale—tried by more than 40,000 agricultural production entities scattered in 1,047 counties in 16 provinces.
- Oil crops: The focuses were winter rape being cultivated in winter fallow fields in southern China, spring rape being grown in suitable land in Northwest China, peanut being planted in Huang-Huai-Hai region, farming-pastoral transitional zone in northern China and Northwest China, and specialty oil crops like flax, sesame and oil sunflower in suitable land across China.





Biological breeding industry is another front the central government has been pushing development to ensure food security. On 3 Feb., 2023, the Ministry of Agriculture and Rural Affairs of the People's Republic of China published the *Implementation Opinions on Carrying out the Major Tasks in Comprehensively Boosting Rural Revitalisation in 2023 Outlined by the Central Committee of the Communist Party of China and the State Council*, which stated that the government should accelerate industrialisation of breeds thus cultivated, further increase pilot programs for industrial application of genetically modified maize and soybean strains, and strengthen supervision on these practices as required by related laws and regulations. Then on 21 Feb., the National Agro-Tech Extension and Service Centre (NATESC) released the *Notice of Applying for National Unified Experiment for Genetically Modified Maize and Soybean Varieties*, which announced to set up unified experiment for such maize and soybean breeds in 2023.





Registration

67 Herbicide TC products approved of registration renewal in early March

Summary: In early March 2023, the Department of Agrochemical Management of MARA released a batch of products obtained registration renewal approval, which include 377 herbicide products, of which 67 are herbicide TC products.

In early March 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 products obtained registration renewal approval, which include altogether 1,027 pesticide products from 420 registrants. Of them, 377 are herbicide products, and specifically, 67 are herbicide TC products. The majority of these herbicides are of low toxicity. For formulation products, top three forms are OD, EC and AS, the trio together taking up some 60% of the total formulations.

As regards herbicide TC products, haloxyfop-P-methyl, clodinafop-propargyl and fomesafen are the top three active ingredients this time. The number of registrants with at least two herbicide TC products approved of renewal reaches 16, and Inner Mongolia Join Dream Fine Chemicals Co., Ltd. tops the list with 5 TC products approved—92% butachlor TC, 95% fomesafen TC, 96% pendimethalin TC, 95% acifluorfen TC and 96% metolachlor TC, all of low toxicity.

TABLE 3: Herbicide products approved of registration renewal by toxicity, March 2023

No.	Toxicity	Number
1	Low	352
2	Mild	24
3	Moderate	1
Total		377

Source: The Department of Agrochemical Management of MARA





TABLE 4: Herbicide products approved of registration renewal by form, March 2023

No.	Form	Number
1	OD	69
2	EC	68
3	TC	67
4	AS	55
5	WP	36
6	SC	22
7	WG	16
8	SE	12
9	SP	7
10	EW	6
11	GR	5
12	SG	5
13	ME	4
14	SL	2
15	TK	2
16	GG	1
Total		377

Source: The Department of Agrochemical Management of MARA



TABLE 5: Major active ingredients of herbicide TC products approved of registration renewal, March 2023

No.	Active ingredient	Number of TC products
1	Haloxypop-P-methyl	4
2	Clodinafop-propargyl	3
3	Fomesafen	3
4	Fluroxypyr-meptyl	2
5	Glyphosate	2
6	Metribuzin	2
7	Oxadiazon	2
8	Alachlor	2
9	Pendimethalin	2
10	Dicamba	2
11	Quinclorac	2
12	Cyhalofop-butyl	2
13	Metolachlor	2
14	Butachlor	2
15	Flumioxazin	2
16	Sulfentrazone	2

Source: The Department of Agrochemical Management of MARA

TABLE 6: Registrants with at least two herbicide TC products approved of registration renewal, March 2023

No.	Registrant	Number of TC products
1	Inner Mongolia Join Dream Fine Chemicals Co., Ltd.	5
2	Shandong Weifang Rainbow Chemical Co., Ltd.	3
3	Zhejiang Changxing First Chemical Co., Ltd.	3
4	Jiangsu Fenghua Chemical Industrial Co., Ltd.	3
5	Shenyang Sciencreat Chemicals Co., Ltd.	3
6	Jiangsu FOPIA Chemicals Co., Ltd.	3
7	Jiangsu Agrochem Laboratory Co., Ltd.	3
8	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.	2
9	Hebei Xinxing Chemical Co., Ltd.	2
10	Ningxia Yongnong BioSciences Co., Ltd.	2
11	Jiangsu Yunfan Chemical Co., Ltd.	2
12	Shandong Zhongshi Pesticide Co., Ltd.	2
13	Lianyungang Avilive Chemical Co., Ltd.	2
14	Heilongjiang Jixiang Agrochemical Co., Ltd.	2
15	Anhui Fengle Agrochemical Co., Ltd.	2
16	ADAMA Huifeng (Jiangsu) Co., Ltd.	2

Source: The Department of Agrochemical Management of MARA



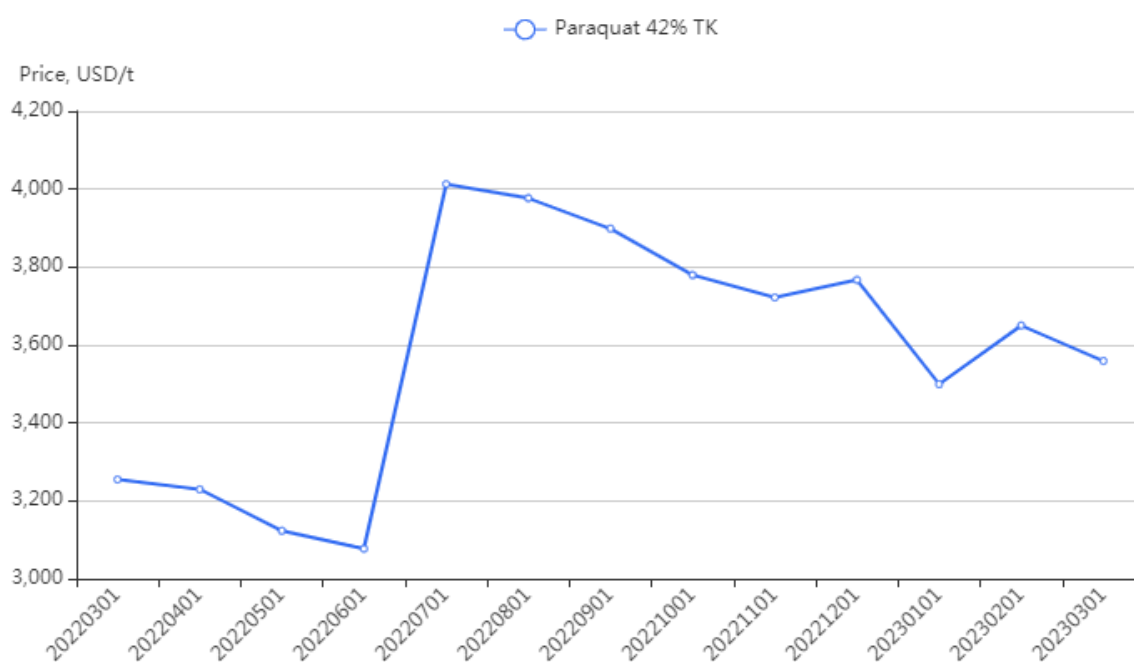
Paraquat and pyridine

Prices of paraquat and pyridine decrease in China in March

Summary: In early March, the FOB price of paraquat 42% TK in China dropped by 2.49% MoM, and the ex-works price of pure pyridine dived 13.30% MoM.

CCM's price monitoring data show that the FOB price of paraquat 42% TK in China decreased by 2.49% MoM to USD3,559/t in March, but on a yearly basis, the price still rose by 9.35%. The ex-works price of pure pyridine in China dived 13.30% MoM to USD5,259/t (RMB36,500/t), which was 19.67% higher than the price in March 2022.

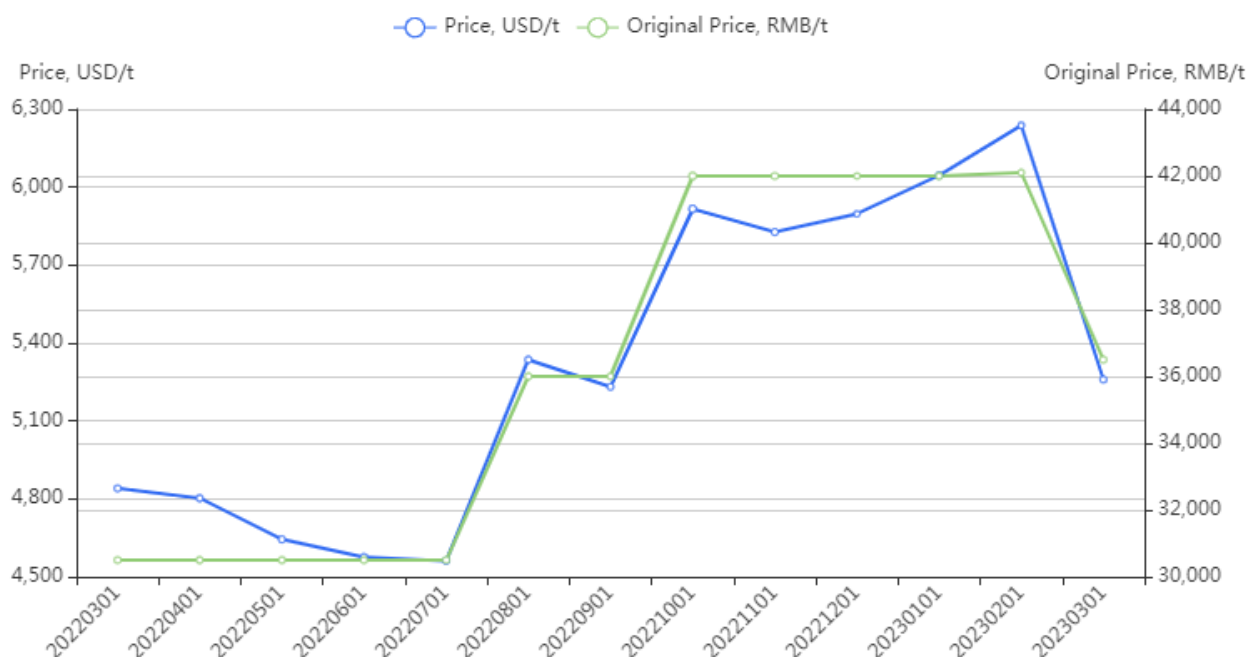
FIGURE 1: FOB price of paraquat 42% TK in China, March 2022–March 2023



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

Source: CCM



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

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

Source: CCM

Nanjing Red Sun: stable production & sales of main products in Q1

Summary: On 14 March, Nanjing Red Sun revealed some information on its R&D progress, production, management, etc.

On 14 March, Nanjing Red Sun Co., Ltd. (Nanjing Red Sun) briefed some key information of an investigation by a securities agency.

The company revealed that since the beginning of this year, operation of its production lines for main products had gradually recovered and now went back to the normal. In terms of sales, affected by abnormal weather in major markets of its products, and pressures from channel inventory accumulated during the price hikes of pesticides last year, demand for some products, as well as their prices, fell from the peaks. But in general, so far this year, its sales were quite stable.

On its paraquat business, Nanjing Red Sun believed that overall market demand for paraquat products would maintain at present level despite bans in certain countries. Globally, paraquat is still widely applied in some 70 countries and regions, in particular, in the US, Indonesia, South America and Africa. In China, supervision on paraquat industry has grown ever harsher, and barriers to the industry have been lifted, which have granted the company greater say in this market. Although prices of paraquat products slipped from last year high, which was inspired by price fall of glyphosate and glufosinate-ammonium products, the company saw generally steady sales.

Nanjing Red Sun has a whole-chain advantage in diquat business. It has a patented product—diquat dichloride, and has built up production line for the key intermediate 2,2'-dipyridyl. Diquat dichloride is cheaper in production cost and friendlier to the environment, compared with the traditional diquat dibromide. This product is expected to fill the void left after the ban on paraquat and substitute for diquat dibromide. In 2022, Nanjing Red Sun set up combined 20,000 t/a production capacity in its Wanzhou production base in Chongqing Municipality and Dongzhi production base in Anhui Province. So far, the company has almost finished the substitution of diquat dichloride





for diquat dibromide in domestic market. It is now pushing forward with the acquisition of pesticide registration in overseas markets, especially the big ones. It has already obtained registration certificate in Paraguay. The company estimates that its diquat dichloride supply to foreign markets will expand quickly.

As regards its industrial chain of pyridine bases, Nanjing Red Sun expressed its determination to explore further down the chain in the future. The company is the first Chinese pesticide company that has independently develop commercial methods for the synthesis of pyridine bases, which broke an over-half-century monopoly by international companies. At present, Nanjing Red Sun has formed the largest and the most comprehensive industrial chain in the pyridine base industry, which starts from bioethanol (made from sweet potato and cassava) to intermediates (3-methylpyridine, 2,2'-dipyridyl, 2,3-dichloropyridine, etc.), and then to herbicides and insecticides (including paraquat, diquat, chlorantraniliprole, chlorpyrifos, imidacloprid, etc.). Currently, the company is in the lead worldwide in terms of production capacity for paraquat, diquat, chlorpyrifos and pyridine bases. Its achievements in bringing into commercial production, through innovation and technological upgrade, of diquat dichloride and chlorantraniliprole are good examples of its enterprising spirit.

Nanjing Red Sun now has a 2,000 t/a chlorantraniliprole project under construction, which is expected to come into operation in H1 2023. It has also planned an L-glufosinate project—the project filing was approved, and is still in preparation of necessary documents.

The company also briefed the progress of the pre-packaged reorganisation work. The company, along with pre-packaged reorganisation administrator, has declared creditor's rights, and started property audit and assessment, and the recruitment of investors. At present, negotiations with investors are underway and later the company will select appropriate reorganisation investors.





Trade analysis

China's atrazine TC exports stays above 60kt in 2022

Summary: In 2022, atrazine products from China were mainly exported to Brazil, the US, Argentina, Nigeria, Mexico, etc. Specifically, China's atrazine TC export stayed above 60,000 tonnes.

According to the import and export data updated on 1 March from Tranalysis, in 2022, atrazine products from China were mainly exported to Brazil, the US, Argentina, Nigeria, Mexico, etc. The export volume to major destinations totalled 82,270.19 tonnes (actual volume), or 76,218.51 tonnes (100% AI volume).

Details of China's atrazine exports in 2022 are as follows:

- Specifications for export: 95% TC, 97% TC, 98% TC, 90% WG, 80% WP, 38% SC, 50% SC
- Export price & export volume: A total of 66,691.11 tonnes (actual volume), or 64,128.36 tonnes (100% AI volume), of TC products were exported at an average price of USD5.23/kg, and 15,579.08 tonnes (actual volume), or 12,090.15 tonnes (100% AI volume), of formulation products were exported at an average price of USD5.29/kg. The atrazine exports peaked in Jan. with 13,421.93 tonnes (actual volume) delivered.
- Major exporter: The top three exporters, Hebei Shanli Chemical Co., Ltd. (Hebei Shanli), Zhejiang Zhongshan Chemical Industry Group Co., Ltd. and Shandong Weifang Rainbow Chemical Co., Ltd. together exported 51,188.71 tonnes (100% AI volume) of atrazine products, the amount making up some 67% (calculated on 100% AI volume) of the total atrazine exports to major destinations.

The export volume of China's atrazine TC to major destinations grew slightly in 2022; the actual volume saw a nearly 7% YoY increase.

Hebei Shanli was the biggest exporter of atrazine products in China in 2022; it only exported TC products and the volume more than doubled to 27,829.13 tonnes (100% AI volume) from 10,973.17 tonnes (100% AI volume) in 2021. The company mainly exported its products (95% TC & 97% TC) to Brazil, the US, Pakistan and Vietnam.



TABLE 7: Exports of atrazine products from China, 2022

Category	Specification	Volume, kg	Average price, USD/kg
Technical	97% TC	35,107,103	5.73
	95% TC	29,261,780	4.61
	98% TC	2,322,228	5.50
	Subtotal	66,691,111	5.23
Formulation	90% WG	7,817,346	6.04
	80% WP	4,382,196	5.37
	50% SC	3,314,994	3.42
	38% SC	64,545	5.35
	Subtotal	15,579,081	5.29
Total		82,270,191	5.24

Note: The data were updated by Tranalysis on 1 March, 2023.

Source: Tranalysis

TABLE 8: Exports of atrazine products from China by month, 2022

Month	Volume, tonne	Value, USD million
Jan.	13,422	74.59
Feb.	6,674	37.09
March	6,434	37.82
April	4,184	24.86
May	6,308	33.15
June	6,061	28.86
July	7,368	36.66
Aug.	10,021	49.50
Sept.	9,745	51.49
Oct.	6,003	31.64
Nov.	4,599	19.57
Dec.	1,453	6.19
Total	82,270	431.40

Note: The data were updated by Tranalysis on 1 March, 2023.

Source: Tranalysis

TABLE 9: Top 10 exporters of atrazine products in China, 2022 vs 2021

No.	2022			2021		
	Exporter	100% AI volume, tonne	Share	Exporter	100% AI volume, tonne	Share
1	Hebei Shanli Chemical Co., Ltd.	27,829	36.51%	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.	14,617	19.71%
2	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.	15,863	20.81%	Hebei Shanli Chemical Co., Ltd.	10,973	14.80%
3	Shandong Weifang Rainbow Chemical Co., Ltd.	7,496	9.84%	Shandong Weifang Rainbow Chemical Co., Ltd.	7,255	9.78%
4	Shandong Dehao Chemical Co., Ltd.	6,342	8.32%	Shandong Dehao Chemical Co., Ltd.	5,502	7.42%
5	CropScience Co., Ltd.	4,789	6.28%	CropScience Co., Ltd.	4,956	6.68%
6	DAI Co., Ltd.	811	1.06%	Hebei Huyang Import and Export Co., Ltd.	1,909	2.57%
7	Shandong Binnong Technology Co., Ltd.	787	1.03%	Kingland Chemical Co., Ltd.	1,865	2.51%
8	Afri Ventures FZE	522	0.68%	Hebei Lingang Chemical Co., Ltd.	1,746	2.35%
9	Jiangsu High Hope International Group Corporation	479	0.63%	S&W International Chemical Logistics (Shanghai) Ltd.	1,663	2.24%
10	Nanjing Bodao Logistics Co., Ltd.	440	0.58%	Shandong Binnong Technology Co., Ltd.	1,473	1.99%

Note: The data were updated by Tranalysis on 1 March, 2023.

Source: Tranalysis



TABLE 10: Top 10 destinations of atrazine TC exported from China, 2022 vs 2021

No.	2022			2021		
	Destination	100% AI volume, tonne	Share	Destination	100% AI volume, tonne	Share
1	Brazil	35,614	55.54%	Brazil	22,712	37.45%
2	Argentina	12,070	18.82%	Argentina	13,123	21.64%
3	The US	12,054	18.80%	The US	10,946	18.05%
4	India	1,756	2.74%	India	6,903	11.38%
5	Pakistan	1,151	1.80%	Pakistan	3,153	5.20%
6	Mexico	560	0.87%	Canada	1,865	3.07%
7	South Africa	364	0.57%	Mexico	745	1.23%
8	Vietnam	342	0.53%	Vietnam	297	0.49%
9	Paraguay	178	0.28%	Paraguay	288	0.47%
10	Costa Rica	19	0.03%	Chile	254	0.42%

Note: The data were updated by Tranalysis on 1 March, 2023.

Source: Tranalysis





Brief news

Shaoxing BSM sees big revenue growth in 2022

On 7 March, Shaoxing BSM Chemical Co., Ltd. (Shaoxing BSM) released its annual report for 2022. During the reporting period, the company's revenue reached USD110.67 million (RMB768.07 million), rising by 44.91% YoY, and the company's net profit attributable to equity holders of the listed company hit USD22.03 million (RMB152.88 million), surging by 171.10% YoY.

Shaoxing BSM's main products are TC, intermediates and formulations of pendimethalin. The company is the sole enterprise in China that boasts the whole-chain production and R&D capability of pendimethalin products. In 2022, Shaoxing BSM reinforced its cooperation with the agrochemical giant BASF SE (BASF), becoming a qualified and stable supplier to BASF with a large number of goods delivered. Shaoxing BSM achieved some USD25.79 million (RMB179 million) sales to BASF alone in 2022, the amount means over 23% of its annual sales.

The company also revealed that in Q1 2023, thanks to strong demand, its lines had been running at full steam with full order books for pendimethalin TC products.

Jiangsu reinforces rules on chemical park accreditation

On 7 March, six departments in Jiangsu Province jointly released the Detailed Rules for Performing Chemical Park Accreditation in Jiangsu Province (the Rules). Coming into effect on 1 March, the Rules divides assessment content into category A (related to industrial planning, spatial planning, construction of public infrastructure, workplace safety and environmental protection capabilities and other basic conditions) and category B (regarding on-site daily management).

In accordance with the Rules, previous chemical parks and chemical concentration zones meeting all requirements in category A assessment are advised to be uniformly granted accreditation as chemical parks. However, if chemical parks and zones failed to meet one of more requirements listed in category A, it is suggested that they go through rectification within a stipulated time period. Suggestions on chemical park accreditation results will be outlined by provincial Department of Industry and Information Technology, and they will be reported to the leading group of chemical industry workplace safety and environmental protection improvement; the group will then formulate opinions for approval, and submit the opinions to the provincial government executive meeting for deliberation. Chemical parks and chemical concentration zones failed at previous accreditation or having relatively severe and above production safety accidents and environmental emergencies after the accreditation in 2020 will be required to conduct rectification within a limited time. During the rectification, formality procedures for all new chemical construction and expansion projects in such parks and zones should be suspended, with exceptions for those for safety improvement, environmental protection, energy conservation and intelligent transformation projects.

Huludao Zaidayingjia to build capacity for two pesticide intermediates

On 8 March., the environmental impact (EI) report of Huludao Zaidayingjia Chemical Co., Ltd. (Huludao Zaidayingjia)'s 800 t/a 5-chloro-1-indanone and 1,000 t/a quinclorac intermediate project was publicised by local authorities. The company has planned to invest USD21.61 million (RMB150 million) in this project, of which USD763.69 thousand (RMB5,300 thousand), or 3.53% of the total investment, is for





environmental protection.

TABLE 11: Product program of Huludao Zaidayingjia's pesticide intermediate project

Production line	Product type	Product	Specification	Capacity, t/a	Use
5-Chloro-1-indanone	Main product	5-Chloro-1-indanone	99%	800	For production of pesticide & for sale
	By-product	Hydrochloric acid	31%	4,950	For sale
		Polyaluminium chloride	28%	3,500	For sale
Quinclorac intermediate	Main product	Quinclorac intermediate	98%	1,000	For production of herbicide & for sale
	By-product	Hydrochloric acid	31%	1,920	For sale
		Sodium hypochlorite	10%	310	For sale
		Sodium sulfite	99.5%	643.75	For sale
		Anhydrous sodium sulfate	97%	8,550	For sale

Source: EI report of Huludao Zaidayingjia's pesticide intermediate project

Gansu Beida's pesticide & fine chemical project breaks ground

On 6 March, Gansu Beida Biotechnology Co., Ltd. (Gansu Beida) held a groundbreaking ceremony for its 22,000 t/a pesticide TC and 5,000 t/a fine chemical project in the Hexipu Industrial Park in Gansu Province. The project will build production lines for pesticides TC including difenoconazole, prothioconazole, zoxamide, tiorantraniliprole, flufenacet and fludioxonil.

Gansu Beida is a wholly-owned subsidiary of Zhejiang Udragon Pesticides and Chemicals Co., Ltd. The parent company is a pesticide and chemical enterprise engaged in R&D, production and trade, and its main products include pesticide intermediates, pesticides TC and new chemical materials.

Hubei releases safety risk review results of chemical parks across the province

On 6 March, the Department of Emergency Management of Hubei Province released the result of safety risk review of chemical parks in Hubei. In accordance with the No.3 Notice issued by the Office of Work Safety Committee of the State Council concerning the implementation of the *National Hazardous Chemical Safety Risk Comprehensive Treatment Plan*, Hubei provincial work safety committee office, supported by technical institutions, carried out on-site review oriented toward 52 chemical parks in Oct.–Dec. 2022, following governmental requirements for chemical parks (Ten Haves & Two Prohibitions) and the Safety Risk Assessment of Chemical Industrial Park.





Of the 52 chemical parks examined, 48 were assessed as C Level park (with a safety assessment score ≥ 70 , but < 85), and 4 were graded as B Level park (with a score ≥ 60 , but < 70) with relatively high safety risks. The four parks are: Zhongxiang Shuanghe Chemical Industry Development Park, Shishou Zhangchengyuan Chemical Industrial Park, Tianmen Hi-Tech Park Biological Industrial Park (core area) and Guangshui Chemical Industry Park.

For B Level parks, new construction projects and expansion projects for chemical products (especially hazardous chemicals) are strictly restricted, except for safety or environmental protection upgrading projects. Local governments should urge these parks to take actions for rectification. For C Level parks, they are encouraged to catch up with the "Ten Haves & Two Prohibitions" requirements. In general, the government strives to bring 20% of the chemical parks to D Level (low safety risk) by the end of 2023 and all the parks to D Level by the end of 2025.

Albaugh acquires Corteva's glyphosate business

On 13 March, Albaugh, LLC (Albaugh) announced the acquisition of Corteva Agriscience (Corteva)'s straight-goods glyphosate business. This deal only covers intangible assets, including trade names, registrations, regulatory data, formulations, patents and business know-how of the concerned business across the globe, with Argentina excluded.

Previously, Albaugh acquired Corteva's glyphosate business in Europe. With this new acquisition, Albaugh's global coverage of glyphosate-dimethylamine salt formulations and registrations will be boosted. The registration resources will be integrated into the company's existing regional sales structure.

According to the chief marketing officer of Albaugh, the acquisition would bolster its presence in glyphosate market in Chile, Uruguay, Ecuador, Colombia, Bolivia, etc., and supplement its glyphosate series in the US, Canada and Brazil.

NATESC unveils National Monitoring Report on Pesticide Resistance of Harmful Organisms

On 9 March, the National Argo-Tech Extension and Service Centre (NATESC) released the National Monitoring Report on Pesticide Resistance of Harmful Organisms for the Year 2022. NATESC, in collaboration with crop protection institutes at each level, relevant scientific research and teaching units, and 100 monitoring sites across the country, carried out the monitoring and evaluation work. Suggestions for prevention and control of weeds in the fields of rice, wheat and maize in 2023 are as follows:

For rice fields:

- Against barnyardgrass:
 - In fields in Northeast China and the middle and lower reaches of the Yangtze River where the weed show high resistance to pesticides, the use of penoxsulam, quinclorac and cyhalofop-butyl should be stopped;
 - In fields without high-resistance shown, utilisation frequency of the three aforementioned herbicides should be limited to once for each product in a rice production season. To slow the development of resistance, herbicides with different mechanisms of action should be used in rotation;
- Against Chinese sprangletop: In Jiangsu, Zhejiang, etc., utilisation of cyhalofop-butyl should be stopped, and application of metamifop restricted to one time only in each rice production season. Rotating herbicides with various mechanisms is encouraged,





in order to delay the development of pesticide resistance.

For wheat fields:

- The use of clodinafop-propargyl, mesosulfuron-methyl, pyroxulam etc. should be halted in high-resistance regions including Henan, Shandong, Hebei, Hubei, Anhui, Shaanxi, Jiangsu, and their use in medium- and low-resistance regions should be limited to once in each wheat production season, along with other physical and agricultural weed control measures;
- Pesticide rotation or mixture with other products of different mechanisms of action is encouraged, to slow the development of pesticide resistance.

For maize fields:

- Against common crabgrass: In Heilongjiang, Hebei, Liaoning, etc., application of nicosulfuron should be restricted, and it is advised to rotate or mix herbicides with different mechanisms like topramezone, amicarbazone, tembotrione;
- Against common dayflower: In Heilongjiang, Liaoning, Jilin, Henan, etc., the utilisation of mesotrione and atrazine should be restricted, and it is recommended to rotate or mix herbicides of different mechanisms including fluroxypyr, clopyralid, fluthiacet-methyl.

EI report of Shenyang Sciencreat's mesotrione expansion project to be approved

On 14 March, the Shenyang Municipal Bureau of Ecology and Environment announced that it was to give a nod to the environmental impact (EI) report of Shenyang Sciencreat Chemicals Co., Ltd. (Shenyang Sciencreat)'s mesotrione expansion project. The publicity period lasted to 20 March.

Shenyang Sciencreat has planned to invest USD459,100 (RMB3.19 million) in this project. It aims to expand mesotrione production capacity by 600 t/a to 2,000 t/a (based on 100% AI), along with addition of capacity for by-products, including 590 t/a sodium sulphite, 641 t/a sodium sulphate and 838 t/a sodium chloride. With the project, the company would upgrade production technique, raise feedstock input, and substitute dichloromethane for ethylene dichloride as the solvent used in acyl chlorination process at the refinement stage of 4-(methylsulfonyl)-2-nitrobenzoyl chloride (NMSBC). The construction will take place in its existing workshop No. 10, and no supporting utilities will be built.

Sino-Agri Red Sun announces a ban on unauthorised exports

On 17 March, Sino-Agri Red Sun Bio-Technology Co., Ltd. (Sino-Agri Red Sun) issued an announcement to ban unauthorised pesticide exports which take advantage of overseas registrations of Nanjing Red Sun Co., Ltd. (Nanjing Red Sun) and its affiliated enterprises. Sino-Agri Red Sun took this move because it had recently received multiple complaints concerning product quality, package, etc. from customers in some markets. Its check-ups show that some traders and distributors exploited the registration resources mentioned before and exported a lot of goods in 2022.

In the announcement, Sino-Agri Red Sun declared that it was the only entity authorised to use the overseas pesticide registration certificates held by Nanjing Red Sun and the affiliated enterprises (the authorisation lasts to 30 Dec., 2039), as well as the general agent of the export business of Nanjing Red Sun, responsible for the across-the-board sale and management in international market (the





agency period lasts to 31 Dec., 2034). Given the unauthorised activities still being undertaken by certain traders and distributors, Sino-Agri Red Sun required them to terminate the infringements immediately, and the company would reserve the rights to pursue their legal responsibilities.

Jointly founded by Sino-Agri Leading Biosciences Co., Ltd. and Nanjing Red Sun, Sino-Agri Red Sun is a company fixing its eyes on international market. Its business scope covers R&D of biological technology, technology consulting, processing and sale of pre-packaged food and primary agricultural products, import and export of goods and technology (excluding goods and technology prohibited by the central government or involving administrative examination and approval).

Jiangsu Yangnong reports big growth in revenue

On 20 March, Jiangsu Yangnong Chemical Co., Ltd. (Jiangsu Yangnong) issued the annual report for 2022. During the reporting period, the company's revenue hit USD2.28 billion (RMB15.81 billion), rising by 33.52% YoY. Jiangsu Yangnong has kept the growth momentum in recent years; the business performance in 2022 reached a new high.

In 2022, the sales of pesticide TC contributed over 60% to its total revenue. Its pesticide TC output stood at 92,593.63 tonnes, jumping 9.46% YoY, and the sales volume amounted to 87,383.07 tonnes, edging up by 1.42% YoY, yet the inventory rocketed by 92.22% YoY to 10,860.79 tonnes. Meanwhile, Jiangsu Yangnong's overseas business expanded greatly—revenue from overseas business soared 49.85% YoY to USD1.49 billion (RMB10.34 billion) from the previous year USD994.27 million (RMB6.90 billion), and the proportion in total revenue climbed to 65.40% from 58.27%.

Founded in 1999, Jiangsu Yangnong went public on the Shanghai Stock Exchange in April 2002. It engages in the agrochemical industry and boasts roughly 70 TC products in production, which cover insecticides, herbicides, fungicides, plant growth regulators, etc. Glyphosate and dicamba are the company's main herbicide products, and pyrethroid insecticides are its speciality products.





Price Update

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

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

Raw Materials	20230208		20230308	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	12,000	1,777.99	13,000	1,873.2
92% Iminodiacetonitrile	9,300	1,377.94	9,300	1,340.06
99% Isopropylamine	9,550	1,414.98	9,550	1,376.08
98% N-(Phosphonmethyl) Iminodiacetic acid	29,000	4,296.81	25,000	3,602.31
99% Phosphorus trichloride	7,850	1,163.1	7,690	1,108.07
99.9% Pyridine	42,100	6,237.78	36,500	5,259.37

Note: Ex-works price includes VAT.

Source: CCM

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





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

Product	20230208		20230308	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	22,000	3,259.65	19,380	2,792.51
92% Acetochlor technical	35,000	5,185.8	35,000	5,043.23
97% Atrazine technical	36,000	5,333.97	36,000	5,187.32
96% Bensulfuron-methyl technical	187,000	27,706.99	183,000	26,368.88
92% Butachlor technical	26,000	3,852.31	26,000	3,746.4
95% Clomazone technical	113,000	16,742.73	113,000	16,282.42
95% Cyhalofop-butyl technical	165,000	24,447.34	165,000	23,775.22
97% Diuron technical	48,000	7,111.95	48,000	6,916.43
98% Fenclorim technical	119,000	17,631.72	119,000	17,146.97
95% Fenoxaprop-P-ethyl technical	172,000	25,484.5	172,000	24,783.86
96% Fluroxypyr technical	162,600	24,091.74	155,000	22,334.29
95% Fomesafen technical	139,000	20,595.03	135,000	19,452.45
95% Glufosinate ammonium technical	146,100	21,647.01	130,700	18,832.85
95% Glyphosate technical	46,400	6,874.89	41,700	6,008.65
95% Haloxyfop-P-methyl technical	178,000	26,373.5	176,000	25,360.23
97% Metolachlor technical	57,400	8,504.71	56,400	8,126.8
95% Metsulfuron-methyl technical	135,000	20,002.37	135,000	19,452.45
95% Nicosulfuron technical	220,000	32,596.46	205,000	29,538.9
97% Oxyfluorfen technical	195,000	28,892.31	185,000	26,657.06
95% Pendimethalin technical	64,400	9,541.87	63,500	9,149.86
95% Pretilachlor technical	34,000	5,037.63	33,800	4,870.32
97% Pyrazosulfuron-ethyl technical	255,000	37,782.26	255,000	36,743.52





80% Quinclorac technical	151,000	22,373.02	149,000	21,469.74
95% Quizalofop-P-ethyl technical	222,500	32,966.87	222,500	32,060.52
95% Tribenuron-methyl technical	135,000	20,002.37	135,000	19,452.45
95% Trifluralin technical	42,000	6,222.96	42,000	6,051.87

Note: Ex-works price includes VAT.

Source: CCM

Shanghai port prices of main herbicides in China, 8 March, 2023



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

Product	20230208		20230308	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	22,500	3,333.73	19,880	2,864.55
92% Acetochlor technical	35,500	5,259.88	35,500	5,115.27
97% Atrazine technical	36,500	5,408.05	36,500	5,259.37
96% Bensulfuron-methyl technical	187,500	27,781.07	183,500	26,440.92
92% Butachlor technical	26,500	3,926.39	26,500	3,818.44
95% Clomazone technical	113,500	16,816.81	113,500	16,354.47
95% Cyhalofop-butyl technical	165,500	24,521.42	165,500	23,847.26
97% Diuron technical	48,500	7,186.04	48,500	6,988.47
98% Fenclorim technical	119,500	17,705.8	119,500	17,219.02
95% Fenoxaprop-P-ethyl technical	172,500	25,558.58	172,500	24,855.91
96% Fluroxypyr technical	163,100	24,165.83	155,500	22,406.34
95% Fomesafen technical	139,500	20,669.12	135,500	19,524.5
95% Glufosinate ammonium technical	146,600	21,721.09	131,200	18,904.9
95% Glyphosate technical	46,900	6,948.97	42,200	6,080.69
95% Haloxyfop-P-methyl technical	178,500	26,447.58	176,500	25,432.28
97% Metolachlor technical	57,900	8,578.79	56,900	8,198.85
95% Metsulfuron-methyl technical	135,500	20,076.45	135,500	19,524.5
95% Nicosulfuron technical	220,500	32,670.54	205,500	29,610.95
97% Oxyfluorfen technical	195,500	28,966.4	185,500	26,729.11
95% Pendimethalin technical	64,900	9,615.95	64,000	9,221.9
95% Pretilachlor technical	34,500	5,111.72	34,300	4,942.36
97% Pyrazosulfuron-ethyl technical	255,500	37,856.34	255,500	36,815.56





80% Quinclorac technical	151,500	22,447.1	149,500	21,541.79
95% Quizalofop-P-ethyl technical	223,000	33,040.95	223,000	32,132.56
95% Tribenuron-methyl technical	135,500	20,076.45	135,500	19,524.5
95% Trifluralin technical	42,500	6,297.04	42,500	6,123.92

*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 March, 2023





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

Product	20230208	20230308
98% 2,4-D technical	3,320.16	2,844.35
92% Acetochlor technical	5,173.95	5,031.7
97% Atrazine technical	5,165.09	5,023.08
96% Bensulfuron-methyl technical	27,097.38	25,788.71
92% Butachlor technical	3,903.34	3,796.02
95% Clomazone technical	16,438.97	15,987.02
95% Cyhalofop-butyl technical	23,080.99	22,446.43
97% Diuron technical	7,066.99	6,872.69
98% Fenclorim technical	17,295.96	16,820.45
95% Fenoxaprop-P-ethyl technical	24,933.17	24,247.69
96% Fluroxypyr technical	23,576.28	21,856.43
95% Fomesafen technical	20,185.25	19,065.4
95% Glufosinate ammonium technical	20,437.16	17,780.29
95% Glyphosate technical	7,439.2	6,501.86
95% Haloxyfop-P-methyl technical	25,796.32	24,805.23
97% Metolachlor technical	8,454.27	8,078.6
95% Metsulfuron-methyl technical	19,608.9	19,069.8
95% Nicosulfuron technical	31,846.34	28,859.15
97% Oxyfluorfen technical	27,248.36	25,140.29
Paraquat 42% TK	3,650	3,559
95% Pendimethalin technical	9,438.53	9,050.76
95% Pretilachlor technical	5,056.04	4,888.11
97% Pyrazosulfuron-ethyl technical	36,899.43	35,884.96





80% Quinclorac technical	21,918.47	21,033.54
95% Quizalofop-P-ethyl technical	32,208.23	31,322.73
95% Tribenuron-methyl technical	19,598.07	19,059.27
95% Trifluralin technical	6,011.05	5,845.79

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

Journalist : Anton Huang
Editor : Joanna
Chief Editor : Anton Huang
Publisher : Kcomber Inc.

Kcomber's legal disclaimers

1. Kcomber guarantees that the information in the report is accurate and reliable to the best of its knowledge and experience. Kcomber defines the report as a consulting product providing information and does not guarantee its information is completely in accordance with the fact. Kcomber shall not have any obligations to assume any possible damage or consequences caused by subscribers' any corporate decisions based upon subscribers' own understanding and utilization of the report.
2. The complete copyright of the report is and will be held by Kcomber. Subscribers shall not acquire, or be deemed to acquire the copyright of the report.
3. The report provided by Kcomber shall be only used as source of subscriber's internal business decisions and shall not be used for any other purposes without Kcomber's prior written consent, unless stated and approved in license contract signed by both parties. Subscribers shall not distribute, resell and disclose the whole report or any part of the report to third parties and shall not publish any article or report by largely or directly copying or citing the information or data based on Kcomber's report without the prior written consent of Kcomber.
4. **"Single User License"** means that there shall be only ONE person to receive, access and utilize the report. Subscriber can present the content of the report that marked the source from Kcomber to their internal colleagues for their internal communication and utilization, but cannot share the whole report to other individuals. Any citation, distribution, reselling and disclosure of the report as well as its partial content to any third party are prohibited, including but not limited to their parent companies or subsidiaries.
5. **"Corporate License"** means that subscriber shall not cite, distribute, resell the report or disclose information of the report to any third party without Kcomber's prior written consent, except subscribers' affiliates controlled with ownership of more than 50% of shares.

Kcomber Inc.

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

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