

Herbicides China Monthly Report 202305

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Headline

In early May, an overall downtrend was witnessed in herbicide price. Big MoM price drops were seen in diquat TK, organophosphorus herbicides and metolachlor TC. The price of nicosulfuron TC edged up a little, while prices of triazine herbicides and pretilachlor TC were basically stable.

In late May, prices of some herbicides were set lower. However, the prices of triazine herbicides, amide herbicides and nicosulfuron TC were basically stable.

Shandong KingAgroot has undertaken a 400 t/a herbicide TC project. The company plans to build production capacity for fluchloraminopyr TC, flusulfenam TC, flufenoximacil TC, bipyrazone TC, broclozone TC, tripyrasulfone TC, fenpyrazone TC and cypirafluone TC, each of the eight products with 50 t/a.

Jiangsu Tuoqiu has already dismantled production lines in its Binhai base for a series of pesticide intermediates and pesticide TCs that it had promised to eliminate from its product mix. These intermediate and TC products include: trichloroacetyl chloride, 5-amino-1-(2,6-dichloro-4-(trifluoromethyl)phenyl)-1H-pyrazole-3-carbonitrile, trifluoromethanesulfinyl chloride, heptafluoropropane, 2-bromoheptafluoropropane, pyraclostrobin TC, ethiprole TC, penoxsulam TC, clopidol, azoxystrobin TC and dicamba TC.

According to weather forecasts, from late April to early May, some regions in China would suffer heavy rain or snowy weather. Therefore, MARA required local departments to strengthen efforts in natural disaster prevention and mitigation, which focus on three major aspects: disaster monitoring & early warning and emergency allocation, region-specific prevention measures, and targeted guidance.

On 9 May, 2023, the Department of Agrochemical Management of MARA released a batch of products passed registration approval, which include 55 herbicide products, of which seven are TC products.

In early May, the FOB price of paraquat 42% TK in China slipped by 7.26% MoM, and the ex-works price of pure pyridine in China dived 18.94% MoM.

From 1 to 12 May, 2023, the COP-11 was held in Geneva, Switzerland. The meeting mainly discussed whether seven chemicals should be listed into Annex III of the Rotterdam Convention. After deliberations, inclusion of paraquat formulations was declined again.

In Q1 2023, China's herbicide formulation products were mainly exported to Australia, Nigeria, Ghana, Thailand, etc., with an export volume of over 300,000 tonnes. The volume contracted by some 7% compared with the export in Q1 2022.







Editor's note

In May, an overall price downtrend was witnessed in herbicide TC market. Stocks in overseas markets were not consumed much, and domestic traders remained quite inactive. In general, the number of orders was limited. Of the 13 herbicides TC that CCM has kept close monitoring, seven saw MoM price drops, these including some sulfonylurea herbicides, organophosphorus herbicides, florasulam TC, diquat TK and diuron TC. Although the 23rd China International Agrochemical & Crop Protection Equipment Exhibition (CAC 2023) which took place this month was a success, the industry as a whole has still lacked confidence.

Weak market demand led to lacklustre operation in many herbicide TC producers. It is learned that operating rates of glyphosate producers were lowered continuously. As for glufosinate-ammonium producers, Jiangsu Sevencontinent Green Chemical Co., Ltd. and Yongnong BioSciences Co., Ltd. cut their supply due to low levels in orders. Nicosulfuron producer Shandong Jingbo Agrochemicals Technology Co., Ltd. also lowered production this month. In general, producers of the majority of herbicides TC have taken a wait-and-see attitude and dared not to increase production in haste.

However, the dull trade could not stop herbicide TC producers from developing their business. KingAgroot CropScience has planned to build capacity for several independently developed herbicides TC in its new subsidiary. Shandong Cynda has proposed to build a 5,000 t/a clethodim project. Weifang Nuchlor may carry out the 3,000 t/a haloxyfop-P-methyl TC technological transformation project in the near future.

The USD/CNY exchange rate in this newsletter is USD1.00 = CNY6.9054 on 4 May, 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

Prices of some herbicides continue to fall in early May

Summary: In early May, an overall downtrend was witnessed in herbicide price. Big MoM price drops were seen in diquat TK, organophosphorus herbicides and metolachlor TC. The price of nicosulfuron TC edged up a little, while prices of triazine herbicides and pretilachlor TC were basically stable.

In early May, an overall downtrend in herbicide price was seen. Compared with early April, early May witnessed the ex-works price of nicosulfuron TC increase; the prices of atrazine TC, ametryn TC and pretilachlor TC kept stable; other main herbicide TC products had falling prices, especially diquat TK, glufosinate-ammonium TC, glyphosate TC and metolachlor TC.

Triazine herbicides ametryn TC and ametryn TC had stable price. Of sulfonyleurea herbicides, nicosulfuron TC saw its ex-works price climb to USD27,949/t (RMB193,000/t), up 2.88% MoM, since production cost went up after the prices rose of raw materials 2-chloronicotinic acid and 2-amino-4,6-dimethoxypyrimidine, and at the same time inventory in nicosulfuron producers was at a low level. These producers mainly had their nicosulfuron TC products shipped in accordance with previous orders. On a monthly basis, quizalofop-P-ethyl TC price slipped 2.33%, and bensulfuron-methyl TC price dropped by 2.78%.

Of amide herbicides, pretilachlor TC had little change to its ex-works price, acetochlor TC experienced a 1.64% MoM price drop, while metolachlor TC saw its price dive 9.09% MoM to USD7,241/t (RMB50,000/t).

Price fall of organophosphorus herbicides continued. The supply of glufosinate-ammonium TC was sufficient in the market, but downstream purchase was not large; its price plummeted 15.79% MoM to USD11,585/t (RMB80,000/t). Inquiries for glyphosate TC increased, yet the sluggish demand still sent the price down 20.22% MoM to USD4,171/t (RMB28,800/t).

The ex-works price of florasulam TC dipped 2.40% MoM. The price of diuron TC kept falling, down 4.55% MoM to USD6,082/t (RMB42,000/t). The price of diquat TK nosedived 22.75% MoM to USD4,475/t (RMB30,900/t).





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

Category	Product	Content of active ingredient	Ex-works price in early May, RMB/t	USD/t	Change over early April (based on RMB price)
Triazine herbicides	Atrazine TC	97%	36,000	5,213.31	Basically flat
	Ametryn TC	95%	44,500	6,444.23	Basically flat
Sulfonylurea herbicides	Nicosulfuron TC	95%	193,000	27,949.14	Up
	Quizalofop-P-ethyl TC	95%	210,000	30,410.98	Down
	Bensulfuron-methyl TC	96%	175,000	25,342.49	Down
Amide herbicides	Pretilachlor TC	95%	33,800	4,894.72	Basically flat
	Acetochlor TC	92%	30,000	4,344.43	Down
	Metolachlor TC	97%	50,000	7,240.71	Down
Organophosphorus herbicides	Glufosinate-ammonium TC	95%	80,000	11,585.14	Down
	Glyphosate TC	95%	28,800	4,170.65	Down
Triazolo[1,5-a]pyrimidine-2-sulfonanilide herbicides	Florasulam TC	98%	507,500	73,493.21	Down
Bipyridinium herbicides	Diquat TK	40%	30,900	4,474.76	Down
Substituted phenylurea herbicides	Diuron TC	97%	42,000	6,082.20	Down

Source:CCM

Price fall continues under sluggish demand in late May

Summary: In late May, prices of some herbicides were set lower. However, the prices of triazine herbicides, amide herbicides and nicosulfuron TC were basically stable.

In late May, an overall downtrend in herbicide price was witnessed. Stocks in overseas markets have not been consumed much, and domestic traders remained quite inactive. In general, the number of orders was limited. Compared with early May, some sulfonylurea herbicides, organophosphorus herbicides, florasulam TC, diquat TK and diuron TC witnessed decreases in their ex-works prices late this





month.

Triazine herbicides and amide herbicides had stable price. Of sulfonylurea herbicides, nicosulfuron TC had a stable price, but quizalofop-P-ethyl TC and bensulfuron-methyl TC experienced slight drops in their prices on a half-month basis, down 1.43% and 3.43%, respectively.

Raw material costs for organophosphorus herbicides declined, and price fall prevailed under weak market demand. The price of glufosinate-ammonium TC dipped another 6.25% from early-May level to USD10,861/t (RMB75,000/t), and that of glyphosate TC went down 7.99% to USD3,838/t (RMB26,500/t).

Compared with early May price, the ex-works price of florasulam TC in late May was recorded at USD66,310/t (RMB457,900/t), down 9.77%; the price of diuron TC came to USD5,648/t (RMB39,000/t), down 7.14% ; the price of diquat TK fell 4.53% to USD4,272/t (RMB29,500/t), affected by dull demand and falling pyridine price.





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

Category	Product	Content of active ingredient	Ex-works price in late May, RMB/t	USD/t	Change over early May (based on RMB price)
Triazine herbicides	Atrazine TC	97%	36,000	5,213.31	Basically flat
	Ametryn TC	95%	44,500	6,444.23	Basically flat
Sulfonylurea herbicides	Nicosulfuron TC	95%	193,000	27,949.14	Basically flat
	Quizalofop-P-ethyl TC	95%	207,000	29,976.54	Down
	Bensulfuron-methyl TC	96%	169,000	24,473.60	Down
Amide herbicides	Pretilachlor TC	95%	33,800	4,894.72	Basically flat
	Acetochlor TC	92%	30,000	4,344.43	Basically flat
	Metolachlor TC	97%	50,000	7,240.71	Basically flat
Organophosphorus herbicides	Glufosinate-ammonium TC	95%	75,000	10,861.07	Down
	Glyphosate TC	95%	26,500	3,837.58	Down
Triazolo[1,5-a]pyrimidine-2-sulfonanilide herbicides	Florasulam TC	98%	457,900	66,310.42	Down
Bipyridinium herbicides	Diquat TK	40%	29,500	4,272.02	Down
Substituted phenylurea herbicides	Diuron TC	97%	39,000	5,647.75	Down

Source:CCM





Company and supply

KingAgroot CropScience plans capacity for innovative herbicide TCs in new subsidiary

Summary: Shandong KingAgroot has undertaken a 400 t/a herbicide TC project. The company plans to build production capacity for fluchloraminopyr TC, flusulfenam TC, flufenoximacil TC, bipyrazone TC, broclozone TC, tripyrasulfone TC, fenpyrazone TC and cypyrafluone TC, each of the eight products with 50 t/a.

On 8 May, Qingdao KingAgroot CropScience Co., Ltd. (KingAgroot CropScience) revealed that it would make full use of the plant of its new subsidiary Shandong KingAgroot CropScience Co., Ltd. (Shandong KingAgroot, its former name was Shandong Yixing Bio-technology Co., Ltd.) and launch a 400 t/a herbicide TC project in the plant. According to the plan, Shandong KingAgroot will construct a set of shared production equipment for 50 t/a fluchloraminopyr TC, 50 t/a flusulfenam TC, 50 t/a flufenoximacil TC, 50 t/a bipyrazone TC, 50 t/a broclozone TC, 50 t/a tripyrasulfone TC, 50 t/a fenpyrazone TC and 50 t/a cypyrafluone TC. Production of these products will rotate in accordance with production schedule, and once the manufacture of a product finishes, production of the next product will only start after the equipment being cleaned up. It is worth noting that all the eight products are novel herbicides independently developed by innovation centres under KingAgroot CropScience.

Shandong Yixing Bio-technology Co., Ltd., founded in Nov. 2006, is located in the Lingang Industrial Park of Weifang Binhai Economic and Technological Development Zone, Weifang City, Shandong Province. In Dec. 2022, Qingdao KingAgroot Resistant Weed Management Co., Ltd. (Qingdao KingAgroot) fully acquired the company and renamed it. As Qingdao KingAgroot is a wholly-owned subsidiary of KingAgroot CropScience, Shandong KingAgroot is thus a wholly-owned sub-subsiary of KingAgroot CropScience.

The park that Shandong KingAgroot settles in, Lingang Industrial Park, is a provincial accredited chemical industrial park; pesticide industry is one of the industries the park focuses on. Multiple domestically influential pesticide enterprises also have plants here. Considering supportive policies at national level, provincial level and local development zone level, it is believed that Shandong KingAgroot has a great potential and its expansion is quite feasible. And this time, the 400 t/a herbicide TC project indeed aims for a better future development of Shandong KingAgroot.

Recent years have witnessed breakthroughs one after another achieved by KingAgroot CropScience's innovation centres in innovative development of novel herbicide products. Besides the aforementioned eight herbicides, other herbicide successes in KingAgroot CropScience include ezuocaoding, jiangmicaoowo and fuxiucaomi.

Commercialisation efforts of self-developed herbicides have also been made in another KingAgroot CropScience's wholly-owned subsidiary Jiangsu KingAgroot Resistant Weeds Control Co., Ltd. (Jiangsu KingAgroot). At present, Jiangsu KingAgroot has already built up production capacity for tripyrasulfone TC, fenpyrazone TC, cypyrafluone TC, bipyrazone TC and downstream formulation products in its plant in the Huai'an Salt Chemical New Material Industrial Park, Huai'an City, Jiangsu Province. The follow-up efforts to launch 400 t/a herbicide TC project in Shandong KingAgroot will not only bring KingAgroot CropScience's total capacity for tripyrasulfone TC, fenpyrazone TC, cypyrafluone TC and bipyrazone TC to a new level, but also show the company's determination to achieve





industrialisation of a larger pool of new products.

Beyond the eye-catching progresses in novel herbicides, KingAgroot CropScience's innovation centres have also branched out to other pesticide categories. It has patented the compound ezuofuchongan, its first fruit in insecticide sector. The product is stomach-toxic, contact-toxic, and systemic to some extent. It acts fast and is effective on a wide range of pests. It is said that KingAgroot CropScience has already proposed to expand capacity of the eight products covered in this 400 t/a project in Shandong KingAgroot, as well as to set up new production line for ezuofuchongan TC in the same plant.

Jiangsu Tuoqiu: production lines for pesticide intermediates & TCs in Binhai base dismantled

Summary: Jiangsu Tuoqiu has already dismantled production lines in its Binhai base for a series of pesticide intermediates and pesticide TCs that it had promised to eliminate from its product mix. These intermediate and TC products include: trichloroacetyl chloride, 5-amino-1-(2,6-dichloro-4-(trifluoromethyl)phenyl)-1H-pyrazole-3-carbonitrile, trifluoromethanesulfinyl chloride, heptafluoropropane, 2-bromoheptafluoropropane, pyraclostrobin TC, ethiprole TC, penoxsulam TC, clopidol, azoxystrobin TC and dicamba TC.

On 16 May, Jiangsu Tuoqiu Agriculture Chemical Co., Ltd. (Jiangsu Tuoqiu) revealed that it had adjusted production structure in the base located in the Yanhai Chemical Park of Binhai Economic Development Area, Yancheng City, Jiangsu Province (hereinafter referred to as Binhai base). Jiangsu Tuoqiu has dismantled the production lines in the base of 400 t/a trichloroacetyl chloride, 75 t/a 5-amino-1-(2,6-dichloro-4-(trifluoromethyl)phenyl)-1H-pyrazole-3-carbonitrile, 50 t/a trifluoromethanesulfinyl chloride, 250 t/a heptafluoropropane, 300 t/a 2-bromoheptafluoropropane, 300 t/a pyraclostrobin TC, 200 t/a ethiprole TC, 200 t/a penoxsulam TC, 300 t/a clopidol, 300 t/a azoxystrobin TC and 1,000 t/a dicamba TC. These lines are the ones Jiangsu Tuoqiu previously promised to phase out. The dismantlement is a response to the local government document Implementation Plan for Improving Workplace Safety and Environmental Protection Rectification in Chemical Industry in Yancheng City; it is also a move to re-orient the company's development plan.

Specifically, the dismantlement of Jiangsu Tuoqiu's 300 t/a pyraclostrobin TC line can hardly affect the supply of pyraclostrobin TC in the Chinese market. Since the compound patent of this product expired in China in June 2016, quite a few pesticide producers have launched pyraclostrobin projects and thrown the lines into operation. Production capacity of pyraclostrobin TC in China has reached quite a big scale and stiff competition has been seen.

Jiangsu Tuoqiu is a backbone enterprise in the pesticide industry in China. It engages in R&D, production and sales activities. The Binhai base is one of its major bases and once contributed a lot to its overall revenue. However, the 21 March explosion in Xiangshui, which took place in 2019, has delivered a heavy blow to the development of multiple chemical enterprises in Jiangsu Province, and the operation of Jiangsu Tuoqiu's Binhai base is no exception.

Before the Xiangshui explosion, Jiangsu Tuoqiu had put into operation the lines of 300 t/a bromothalonil TC, 300 t/a diniconazole TC, 600 t/a paclobutrazol TC, 500 t/a fipronil TC, 7,700 t/a pesticide formulations, and the before mentioned intermediate and TC lines in the Binhai base. After the severe accident, all chemical enterprises in industrial parks in Yancheng City were required to launch workplace safety and environmental protection rectification efforts; for Jiangsu Tuoqiu, all these lines in Binhai base were ordered to suspend





production and go through rectification by local government.

To facilitate production resumption in this base, Jiangsu Tuoqiu actively took the opportunity to optimise production structure and made the promise to phase out some production equipment in the base. With rectifications made and rounds of approval processes gone through, its lines for bromothalonil TC, diniconazole TC, paclobutrazol TC, fipronil TC and pesticide formulations have been allowed for resumption.

It should be noted that Jiangsu Tuoqiu still intends to make better use of the Binhai base, as long as the circumstances permit. The company now has come up with a 19,000 t/a pesticide formulation line technological transformation project for the future development of this base. It will invest in expanding the existing 7,700 t/a pesticide formulation lines (one with 4,500 t/a, and the other with 3,200 t/a) into altogether 19,000 t/a pesticide formulation lines. Considering the proposed products and their performance, the industry positioning of the chemical park in which it settles, and related laws and regulations, it is believed that Jiangsu Tuoqiu's new project is feasible. And it is highly possible that the company will speed up the whole approval procedures to get the construction started.

Moreover, Jiangsu Tuoqiu has accelerated branching out to other provinces outside Jiangsu, in order to reduce risks from accident-induced production suspension in an individual production base. In April 2020, it founded the subsidiary Tuoqiu Biotechnology (Lanzhou) Co., Ltd. in the Lanzhou New Area Chemical Park in Lanzhou City of Gansu Province. It is on the way to develop the subsidiary into a solid production base.





Policy

MARA: strengthen efforts in natural disaster prevention and mitigation at local levels

Summary: According to weather forecasts, from late April to early May, some regions in China would suffer heavy rain or snowy weather. Therefore, MARA required local departments to strengthen efforts in natural disaster prevention and mitigation, which focus on three major aspects: disaster monitoring & early warning and emergency allocation, region-specific prevention measures, and targeted guidance.

Weather forecasts said that from 28 April to 7 May, northern parts of China would witness active cold air and obvious temperature fluctuations, average temperature being 2°C to 4°C lower in general compared with the figures registered in the same period in recent years, with scale 4–6 gale or 7–9 gust; eastern parts of Northwest China, North China and Northeast China would have snowy weather. Huang-Huai Region would go through light to moderate rain, while Jianghuai Region, southern Jiangnan Region, northern South China and Guizhou Province would suffer moderate to heavy rain or even downpour in certain local areas. Considering these, the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) issued a notice and required departments of agriculture and rural affairs at various levels to strengthen efforts in natural disaster prevention and mitigation.

First, subordinate departments should intensify disaster monitoring & early warning and emergency allocation. Exchanges with meteorological departments must be increased, and close attentions to weather changes paid. Comprehensive prevention plans should be worked out by experts and preparations made in terms of technique, personnel as well as necessary supplies. Timely warnings should be given out, with emphasis on key regions, key crops and time frames of concern, and targeted prevention actions carried out in advance. Besides, emergency services should be made available to track disasters and spring sowing progress, as well as to correctly assess damages the disasters may cause.

Second, region-specific prevention measures should be implemented. Specifically:

- **Spring sowing areas in Northeast China:** More agricultural machinery should be put into use to speed up soil preparation. As long as the ground temperature stays above 8°C, seeds could be sown. For traditional arid areas, rainfall provides favourable conditions for sowing and the opportunities should be seized. Where water logging happens, active efforts must be taken to drain the water, scarify the soil, reduce the moisture, and thus catch up with sowing work. In some areas where low temperature and rains postpone the sowing, guidance on choosing suitable crops should be provided to farmers, and efforts made to guard against cross zone planting.
- **Spring sowing areas in Northwest China:** Seeds should be sown at the time when the soil is properly moisturised, while avoid strong wind, temperature fall and sand-dust weather. After the sowing, the soil should be filmed to retain the soil temperature and moisture; the mulch film should be tightly placed, so that strong winds cannot ruin it easily. The sown fields should be carefully managed; reseed if necessary, and make sure seedlings are strong and grow at pretty much the same pace.
- **Jianghuai Region and Huang-Huai Region:** If the rains coincide with wheat heading-and-flowering stage, Fusarium head blight might occur heavily and widely. So the window period for prevention and control—the following 10 days starting from 27 April—should be made good use of, to carry out specialised joint prevention and control work. Pesticides should be applied first when flowers are spotted and again when full-bloom stage comes, so that heavy occurrence could be stemmed.
- **South China:**
 - Early rice planting areas: Timely drainage is a must after heavy rains. Replant when seedlings are destroyed by rush of water, and spray foliar fertiliser at proper time in fields with weak performance to facilitate growth.





- Rape planting areas: Before the rains come, rush against the time to harvest mature rape crops.
- **Southwest China where previously was affected by droughts:** When the rains come, seize the favourable opportunities to retain water, soak fields and plant seedlings; meanwhile, guard against the danger of drought-wetness abrupt alternation.
- **High altitude areas where temperature falls below 0°C:** In such areas, antifreeze could be sprayed on fruit trees, and tree trunks should be wrapped up, smoked at appropriate time, or go through other protective measures to stay away from unbearable cold and freezing. Structures like vegetable greenhouses should be reinforced to avoid damages to greenhouse film, collapse, etc., as well as to strengthen heat-retaining capacity. Management of vegetable seedling cultivation should be taken good care of, and pest & disease prevention and control at this stage improved. In areas with snowfall, the snows should be removed timely, and efforts made to increase ground temperature while reduce moisture.

Third, targeted guidance should be offered and improved. The responsibility-implementation working mechanism should be followed—organise agrotechnicians or agrotechnician teams to visit the fields, define their specific responsibilities, and have them paired with certain households, so that targeted guidance and key measures for natural disaster prevention and mitigation could be offered based on individual situations. Give full play to social service providers and new type of agricultural operating entities; show small farmer households scientific approaches to fighting natural calamities and encourage them to follow suit. Provide good services of whole-process entrusted management, commissioned planting, etc., quicken the pace of sowing and improve the quality of spring sowing. In addition, agricultural means of production such as seeds for disaster relief purposes and fertilisers should be better allocated, so as to facilitate self-rescue and the recovery of agricultural production, as well as to reduce the losses caused by disasters to the minimum.





Registration

Seven herbicide TC products approved of registration in early May

Summary: On 9 May, 2023, the Department of Agrochemical Management of MARA released a batch of products passed registration approval, which include 55 herbicide products, of which seven are TC products.

On 9 May, 2023, the Department of Agrochemical Management of the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) released a batch of pesticide products approved of registration, which include 55 herbicide products. Most of these herbicides are of low toxicity, and the three most popular forms are EC, OD and SC.

Major active ingredients in these herbicide products are metamifop, butoxydim, atrazine, glyphosate and glufosinate-p. Altogether six registrants have at least two herbicide products approved of registration this time. Of the 55 approved herbicide products, seven are TC products. Shandong Weifang Rainbow Chemical Co., Ltd. had three TC products approved: a 98% chloridazon TC, a 97% fluorochloridone TC and a 98% butoxydim TC. The rest four products are a 90% glufosinate-p TC from Hunan Lier Biotechnology Co., Ltd., a 98% pyrasulfotole TC from Weifang Sino-Agri Union Chemical Co., Ltd., a 96% metamifop TC from Synwill (Nantong) Chemical Co., Ltd. and a 98% topramezone TC from Shandong Aokun Crop Science Co., Ltd.

TABLE 3: Herbicide products approved of registration by toxicity released on 9 May, 2023

No.	Toxicity	Number
1	Low	51
2	Mild	3
3	Moderate	1
Total		55

Source: The Department of Agrochemical Management of MARA



TABLE 4: Herbicide products approved of registration by form released on 9 May, 2023

No.	Form	Number
1	EC	13
2	OD	10
3	SC	10
4	TC	7
5	SL	5
6	WG	3
7	ME	3
8	GR	1
9	SP	1
10	EW	1
11	SE	1
Total		55

Source: The Department of Agrochemical Management of MARA

TABLE 5: Major active ingredients of herbicide products approved of registration released on 9 May, 2023

No.	Active ingredient	Number
1	Metamifop	3
2	Butroxydim	3
3	Atrazine	3
4	Glyphosate	3
5	Glufosinate-p	3

Source: The Department of Agrochemical Management of MARA

**TABLE 6:** Registrants with at least two herbicide products approved of registration released on 9 May, 2023

No.	Registrant	Number
1	Shandong Weifang Rainbow Chemical Co., Ltd.	7
2	Zenenorva Crop Protection (Anhui) Co., Ltd.	6
3	Shandong Binnong Technology Co., Ltd.	6
4	Weifang Sino-Agri Union Chemical Co., Ltd.	3
5	Shandong Aokun Crop Science Co., Ltd.	3
6	Anhui Lantian Agricultural Development Co., Ltd.	2

Source: The Department of Agrochemical Management of MARA





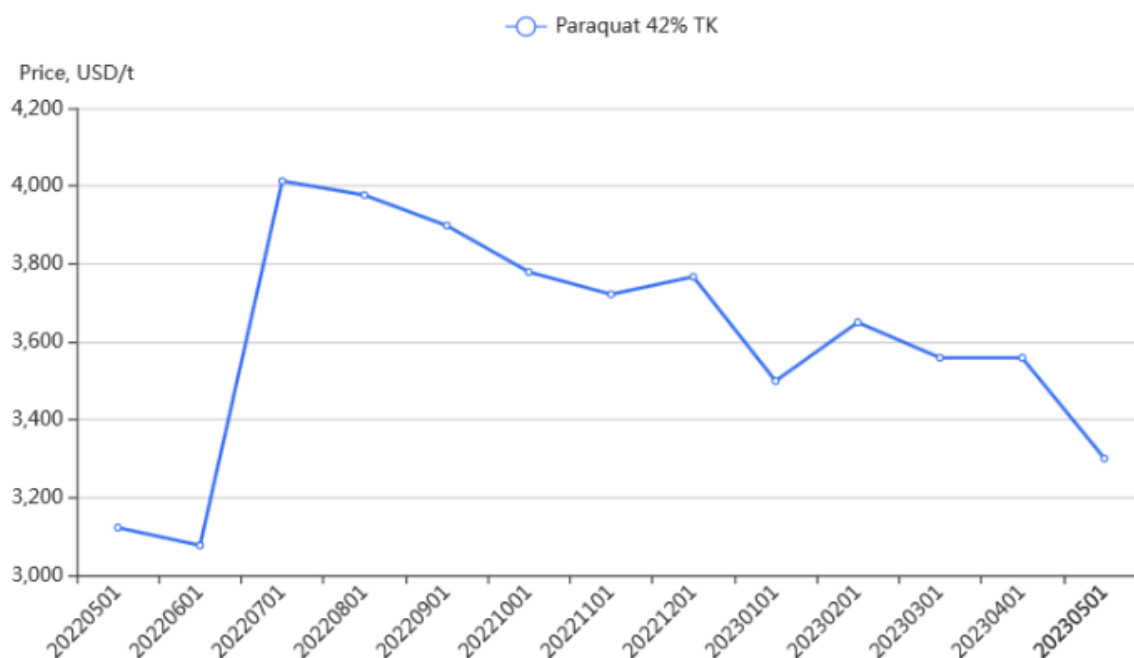
Paraquat and pyridine

Paraquat and pyridine prices drop in China in May

Summary: In early May, the FOB price of paraquat 42% TK in China slipped by 7.26% MoM, and the ex-works price of pure pyridine in China dived 18.94% MoM.

CCM's price monitoring data show that the FOB price of paraquat 42% TK in China decreased to USD3,300/t in May, down 7.26% MoM; on a yearly basis, the price still registered a 5.68% increase. The ex-works price of pure pyridine plunged further by 18.94% MoM to USD3,476/t (RMB24,000/t), which was 25.17% lower than the price in May 2022. Considering ample supply in the market plus weak downstream demand, the prices of paraquat and pyridine are expected to keep falling in the short term.

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

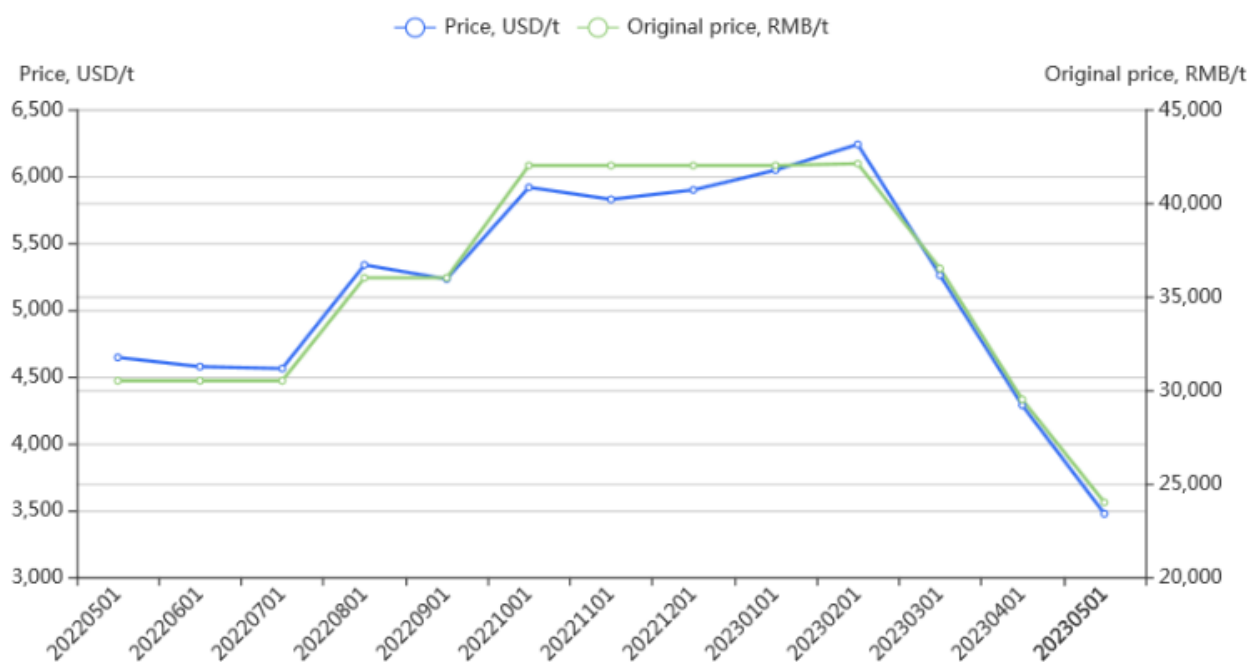


Note: The monthly prices here are the prices recorded early each month.

Source: CCM



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



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

Source: CCM

Paraquat stays outside Rotterdam Convention Annex III

Summary: From 1 to 12 May, 2023, the COP-11 was held in Geneva, Switzerland. The meeting mainly discussed whether seven chemicals should be listed into Annex III of the Rotterdam Convention. After deliberations, inclusion of paraquat formulations was declined again.

From 1 to 12 May, 2023, the eleventh meeting of the Conference of the Parties to the Rotterdam Convention (COP-11) was held in Geneva, Switzerland. Attempts to include paraquat formulations in Annex III of the Rotterdam Convention failed again, five years in a row, after considerations and discussions in COP-7 (took place in 2015), COP-8 (2017), COP-9 (2019), COP-10 (2022, postponed for a year due to COVID-19). This time, the number of parties voted against the inclusion increased to seven.

In the meeting, Chinese pesticide enterprises, represented by Sino-Agri Red Sun Bio-Technology Co., Ltd., in cooperation with paraquat consumers across the globe, elaborated on the great contributions and irreplaceability of paraquat products in the cause of safeguarding global food security. These efforts made by multiple parties led to the final decision that paraquat should stay outside the rule of Annex III of the Rotterdam Convention.

If paraquat formulations get listed in Annex III, Prior Informed Consent (PIC) procedure will be implemented in international trade of such products, and the contracting parties thus will be granted with the right to decide whether they will allow future import of the products.

Nanjing Red Sun Co., Ltd. (Nanjing Red Sun) holds the largest paraquat production capacity worldwide, with 32,000 t/a. The company also owns the world's largest capacity for the key raw material pyridine, which is developed by the company itself. It also boasts quite a complete set of intermediates, first-rate production technologies, advanced automated production and high-standard production bases.



The result of the COP-11 meeting—paraquat not being included in Annex III, is a piece of good news for Nanjing Red Sun, as well as for China's paraquat industry. Some countries may drop the idea to ban the use of paraquat formulations. And one day if paraquat gets listed on Annex III, global ban will then speed up.

As of 11 May, 2023, Nanjing Red Sun has had five valid pesticide registrations for paraquat products, all export-only registrations and held by its wholly-owned subsidiary Nanjing Red Sun Biochemical Co., Ltd. (Red Sun Biochemical). Red Sun Biochemical itself has 5,000 t/a production capacity for paraquat dichloride, adopting world-class production technologies. It has also made R&D efforts in upgrading its pyridine industrial chain, and in developing eco-friendly synthesising methods for key intermediates and new-generation green agrochemicals which have high efficacy, low toxicity, and leave no residues.

TABLE 7: Paraquat registrations held by Red Sun Biochemical in China, as of 11 May, 2023

No.	Registration code	Content	Form	Expiry date
1	PD20111065	250g/L	AS	2024/12/31
2	PD20082072	200g/L	AS	2024/12/31
3	PD20081501	32.6%	TK	2023/11/6
4	PD20081349	30.5%	TK	2023/10/21
5	PD20131912	20%	GW	2023/9/25

Note: Nanjing Red Sun Biochemical Co., Ltd. is a wholly-owned subsidiary of Nanjing Red Sun.

Source: The Institute for the Control of Agrochemicals, Ministry of Agriculture and Rural Affairs (ICAMA)



TABLE 8: Export volume (based on 100% AI) of paraquat products from China to main destinations, 2022

No.	Destination	Export volume (100% AI), tonne
1	Argentina	9,734
2	The US	9,466
3	Nigeria	9,187
4	Australia	4,788
5	Mexico	3,988
6	Paraguay	2,478
7	Indonesia	2,182
8	India	1,971
9	Ghana	1,936

Source: *Tranalysis*

In 2022, paraquat products from China were mainly exported to Argentina, the US, Nigeria, Australia, Mexico, etc. The export volume to Argentina, the US and Nigeria each surpassed 9,000 tonnes (based on 100% AI).

The decision to keep paraquat outside of Annex III will have profound influences. It will save Chinese paraquat producers from big export losses, as paraquat products could still be used in more than 100 countries and regions that have not introduced a ban on such products. Moreover, paraquat will still play a positive role in facilitating global bumper harvests.

Trade analysis

Export volume of herbicide formulations from China slips 7% YoY in Q1 2023

Summary: In Q1 2023, China's herbicide formulation products were mainly exported to Australia, Nigeria, Ghana, Thailand, etc., with an export volume of over 300,000 tonnes. The volume contracted by some 7% compared with the export in Q1 2022.

According to the statistics from General Administration of Customs of the People's Republic of China (China Customs), in Q1 2023, China altogether exported 335,615.32 tonnes (actual volume, the same hereafter) of herbicide formulation products with a total export value of USD1,287.67 million. Major export destinations were Australia, Nigeria, Ghana, Thailand, etc. Compared with the volume of herbicide formulations exported from China in the same period last year, this year's figure saw a 7.28% decrease.

The average export price of China's herbicide formulations in Q1 2023 plunged 31.37% YoY to USD3.85/kg. It is worth noting that in general, market prices of herbicides TC and herbicide formulations in China kept falling in this period, since herbicide trade was in a slack season.

Herbicide formulations from China were exported to some 131 countries or regions in Q1 2023. Of major destinations, Brazil had the volume of herbicide formulations exported from China tumbled to about 10,565 tonnes in the first three months this year from some 51,723 tonnes achieved in Q1 2022, and its position in the top 10 destination list dropped to the tenth from the first place.

TABLE 9: Herbicide formulation exports from China, Q1 2023 vs Q1 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
Jan.	109,966,242	4.16	145,107,333	5.71
Feb.	93,836,699	3.76	86,666,285	5.74
March	131,812,376	3.62	130,209,161	5.38
Total	335,615,317	3.85	361,982,779	5.61

Note:1. The data were updated to 8 May, 2023.

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

Source:China Customs



TABLE 10: Top 10 destinations of herbicide formulations exported from China, Q1 2023 vs Q1 2022

No.	Q1 2023			Q1 2022		
	Destination	Volume, tonne	Share	Destination	Volume, tonne	Share
1	Australia	27,026	8.05%	Brazil	51,723	14.29%
2	Nigeria	26,287	7.83%	Nigeria	42,279	11.68%
3	Ghana	25,829	7.70%	Australia	41,927	11.58%
4	Thailand	21,749	6.48%	The US	38,034	10.51%
5	The US	15,450	4.60%	Indonesia	15,959	4.41%
6	Cameroon	15,395	4.59%	Ukraine	14,788	4.09%
7	Canada	13,157	3.92%	Thailand	14,296	3.95%
8	Indonesia	12,514	3.73%	Ghana	12,797	3.54%
9	Russia	10,700	3.19%	Russia	10,656	2.94%
10	Brazil	10,565	3.15%	Canada	10,630	2.94%

Note:1. The data were updated to 8 May, 2023.

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

Source:China Customs





Brief news

Shandong Cynda proposes to build 5,000 t/a clethodim project

In late April, Shandong Cynda Chemical Co., Ltd. (Shandong Cynda) announced that the company had planned to build production lines of 2,500 t/a clethodim TC and 2,500 t/a clethodim TK in its plant in the Boxing Economic Development Zone, Binzhou City, Shandong Province, along with supporting storage tanks. It will take 12 months to construct the project, with an investment totalling USD9.50 million (RMB65.60 million).

According to Shandong Cynda, boosted by the expansion of marketing channels, it has witnessed continuous sales growths of clethodim products in recent years, which has made clethodim one of its flagship products. Moreover, through this 5,000 t/a clethodim expansion project at the headquarters plant, the company aims to optimise its production capacity layout, satisfy the needs for future development, as well as to consolidate its advantage of large-scale clethodim capacity and improve product competitiveness.

Rice regenerative agriculture cooperation project launched in Heilongjiang

On 10 May, the launching ceremony of the cooperation project "Rice Regenerative Agriculture, Bolstering Sustainable Development of the Agricultural Industry from Farm to Dining-table" was jointly held by Bayer CropScience (China) Co., Ltd., Nestle (China) Ltd. and Netafim (Guangzhou) Agricultural Technology Co., Ltd., along with the Nestle supply chain base Hongyi Food Cultivation Professional Cooperative, in Xinzhan Town, Zhaoyuan County, Daqing City, Heilongjiang Province. Aiming to set a good example of sustainable development in agriculture, the three-party-sponsored project will try best efforts to attain carbon sequestration and carbon reduction targets in every link of the industrial chain, and thus help advance green agricultural development in Heilongjiang Province as well as across China.

The three parties will work closely. For the phase I of this project, which covers 333.33 ha of rice-growing areas, they will adopt the approach of maintaining soil surface covered by crops and raising soil fertility and root absorptive capacity. Moreover, drip irrigation and other water-conserving irrigation technologies will be introduced to diminish the waste of water resources. Emission of methane and other greenhouse gases will be lowered. Meanwhile, precision agriculture management technologies will be applied to realise visual real-time monitoring and traceability during the whole course of plant growth. With all these processes, a whole-set solution for rice regenerative agriculture will be developed, which balances both business benefits and environmental-friendly, green and sustainable development.

China approves bromoxynil octanoate registration with application in millet field

On 8 May, Jiangsu Heben Pesticide & Chemicals Co., Ltd. (Jiangsu Heben)'s bromoxynil octanoate 25% EC was approved of extension of target and application to annual broadleaf weeds in millet field, which represents that bromoxynil octanoate has been registered on millet field for the first time in China. Previously, the product was only registered to control annual broadleaf weeds in spring wheat field. Data from the Institute for the Control of Agrochemicals, Ministry of Agriculture and Rural Affairs (ICAMA) show that, as of 15 May, 2023, Jiangsu Heben held pesticide registrations for two bromoxynil octanoate single-formulation products—a 97% TC (valid till 6 Nov. 2023) and the 25% EC (valid till 25 Dec. 2023).



**TABLE 11:** Maximum Residue Limits (MRL) for bromoxynil octanoate in food in China

Category	Food	MRL, mg/kg
Grain	Maize	0.05
Grain	Wheat	0.1
Vegetables	Garlic	0.1
Vegetables	Green garlic	0.1
Vegetables	Garlic sprout	0.1

Note:1. All the MRLs prescribed are temporary limits.

2. MRLs for bromoxynil octanoate in other foods remain undecided in China.

Source:National Food Safety Standard - Maximum Residue Limits for Pesticides in Food (GB 2763-2021)

CCPIA issues List of Best-selling Branded Products in Chinese Crop Protection Market

On 16 May, the China Crop Protection Industry Association (CCPIA) issued the List of Best-selling Branded Products in Chinese Crop Protection Market in 2022, with 12 herbicide products on the list.



TABLE 12: List of Best-selling Branded Products in Chinese Crop Protection Market in 2022

No.	Company	Product	Brand
1	Jiangsu Sevencontinent Green Chemical Co., Ltd.	Glyphosate 200g/L AS	Qizhou Jingtiandi
2	Yongnong BioSciences Co., Ltd.	Glufosinate-p 10% SL	Jinbaisu
3	Corteva (China) Investment Co., Ltd.	Florpyrauxifen 3% EC	Lingsike-Dan
4	BASF (China) Co., Ltd.	Topramezone 30% SC	Baowei
5	Shandong Runyang Chemical Co., Ltd.	Glufosinate-ammonium-fluoroglycofen-ethyl 21% OD	Hong'eryuan
6	Syngenta (Suzhou) Crop Protection Co., Ltd.	S-Metolachlor 960g/L EC	Jindu'er
7	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.	Atrazine-mesotrione-nicosulfuron 35% OD	Baosanjin
8	Jilin Jinqiu Pesticide Co., Ltd.	Acetochlor-atrazine-2,4-D-ethylhexyl 76% SE	Qiandifeng
9	Anhui Zhongbang Biological Engineering Co., Ltd.	Metamifop 15% OD	Zhongbang Mali
10	Yixing Yizhou Chemical Products Co., Ltd.	Clodinafop-propargyl 15% EW	Yizhou
11	Anhui Huilong Group Youngsun Pesticides Co., Ltd.	Pyroxulam 8% OD	Youngsun Yousuiduo
12	Jiangxi Bafeite Chemical Co., Ltd.	Metamifop-penoxsulam 12% OD	Duanjin

Source:CCPIA

Shandong Ruichengda plans to build 3,000 t/a biopesticide formulation project

On 16 May, the Shanghe Branch of the Bureau of Ecology and Environment of Jinan City accepted and publicised the environmental impact (EI) report of the 3,000 t/a new biopesticide formulation project of Shandong Ruichengda Biotechnology Co., Ltd. (Shandong Ruichengda). The company plans to invest USD15.93 million (RMB110 million) to construct the project in the Jinan Crop Protection Technology Industrial Park, Shanghe County, Jinan City, Shandong Province. Proposed products in this project include 11 herbicide products, along with 18 insecticide products and a pesticide synergist product.

TABLE 13: Herbicide products proposed in Shandong Ruichengda's 3,000 t/a biopesticide formulation project

No.	Herbicide product	Capacity, t/a
1	Nicosulfuron·atrazine 23% OD	100
2	Nicosulfuron·atrazine 24% OD	200
3	Nicosulfuron 40g/L OD	150
4	Nicosulfuron 3%·mesotrione 7%·atrazine 20% OD	50
5	Nicosulfuron 2%·mesotrione 4%·atrazine 24% OD	50
6	Clethodim 24% EC	150
7	Haloxypop-P-methyl 108g/L EC	150
8	Pendimethalin 330g/L EC	50
9	Florasulam 5% SC	150
10	Clodinafop-propargyl 15% ME	50
11	Glyphosate·2,4-D 32% AS	300

Source:EI report of Shandong Ruichengda's 3,000 t/a biopesticide formulation project

Shandong releases opinions for prevention and control of maize pests & diseases

On 18 May, seeking to prevent and control pests & diseases and obtain a bumper harvest of maize, the Agro-Tech Extension and Service Centre of Shandong Province issued the Opinions on Techniques for Comprehensive Prevention and Control of Maize Diseases, Pests and Weeds in 2023.

Specifically, local agencies/stations are urged to:

- Enhance the monitoring and early warning: Efforts should be made to take actions swiftly, including increasing the monitoring sites and intensifying field investigations against *Spodoptera frugiperda* and other major migratory and epidemic diseases and pests;
- Implement prevention and control measures in a scientific manner. Advancement is expected in:
 - cultivating disease-resistant or disease-tolerant varieties, planting at reasonable intervals, and applying fertilisers and healthy cultivation techniques in accordance with local conditions;
 - paying high attention to the prevention and control of grayish-green blight, head smut, rough dwarf, underground pests, *Laodelphax striatellus*, *Proxenus lepigone*, thrips, etc.;
 - timely removing weeds around the edges of the fields, irrigation canals and ditches, and reducing weed seeds in the fields;
 - reinforcing field management and eradicating diseased plants, weeds and straw in seeding furrows so as to destroy in a timely manner potential suitable areas for the growth of diseases and pests;
 - applying pesticides wisely, and rotating or mixing pesticides to avoid the development of resistance;
- Promote unified prevention and control.



FMC and Syngenta Crop Protection to jointly roll out tetflupyrolimet-based herbicides on rice

In May, Syngenta Crop Protection AG (Syngenta Crop Protection) and FMC Corporation (FMC) jointly agreed to launch a groundbreaking weed prevention and control technology for rice field usage in Asian markets. The technology is based on the active ingredient tetflupyrolimet, developed by FMC with support from Syngenta Crop Protection; the product exhibits a new mechanism of action. According to the two companies, it will provide a method to mitigate weed resistance to existing herbicides in rice-growing areas.

In accordance with their agreement, Syngenta Crop Protection will apply for registration of tetflupyrolimet single and mixed formulations for rice in China and launch the products in the Chinese market, while FMC will focus its efforts on developing tetflupyrolimet mixtures on rice in China. In India, Vietnam, Indonesia, Japan and South Korea, however, FMC will take on the responsibility for tetflupyrolimet registration, and both the two will launch tetflupyrolimet series to these markets. Moreover, Syngenta Crop Protection will exclusively introduce tetflupyrolimet products on rice in Bangladesh.

EI report of Weifang Nuchlor's haloxyfop-P-methyl technological transformation project approved

On 26 May, the Binhai Branch of the Ecology and Environment Bureau of Weifang City announced approval of the environmental impact (EI) report the 3,000 t/a haloxyfop-P-methyl TC technological transformation project of Weifang Nuchlor Chemical Co., Ltd. (Weifang Nuchlor). The project will transform its existing haloxyfop-P-methyl TC lines, but the capacity for haloxyfop-P-methyl TC will remain at 3,000 t/a, and use the same line to produce fluazifop-P-butyl TC, at capacity of 500 t/a.

Weifang Nuchlor, a wholly-owned subsidiary of Shandong Luba Chemical Co., Ltd. (Shandong Luba), has built up production capacity for pyridine, diquat and haloxyfop-P-methyl. In Jan. this year, Weifang Nuchlor's 13,000 t/a diquat TC project was approved by local government. Once this project is finished, Weifang Nuchlor's diquat TC capacity will expand from 4,000 t/a to 13,000 t/a, which will help Shandong Luba gain certain advantage in diquat market.

Jilin Pingji plans capacity for intermediates of clethodim and imidazolinone herbicides

On 24 May, the Department of Ecology and Environment of Jilin Province announced acceptance of the environmental impact (EI) report of the 2,500 t/a pesticide intermediate project (phase I) of Jilin Pingji Industry and Trade Co., Ltd. (Jilin Pingji).

Overview of the project:

- Nature of the project: New construction;
- Location: Existing plant of Jilin Pingji, Eastside of Lijiang Road, Longtan District, Jilin City, Jilin Province;
- Investment: USD4.34 million (RMB30 million);
- Construction content: 1,600 t/a Production capacity for chloroallyloxyamine, also known as (3-trans-chloroallyl)oxyamine, an intermediate for the production of clethodim TC, and 900 t/a capacity for diethyl 5-ethylpyridine-2,3-dicarboxylate, a raw material for synthesising imidazolinone herbicides.

EI report of Jiangsu Corechem's 12,000 t/a pesticide formulation project approved

On 26 May, Huai'an Industrial Park Branch of the Ecology and Environment Bureau of Huai'an City approved the environmental impact





(EI) report of Jiangsu Corechem Co., Ltd. (Jiangsu Corechem)'s 12,000 t/a pesticide formulation technological transformation project, which involves building workshop NO.6 with production lines for 2,300 t/a SC products, 500 t/a OD products, 2,400 t/a SL products, 300 t/a AS products, 800 t/a EC products, 500 t/a PA products, 2,500 t/a WG products, 400 t/a GR products, 300 t/a WP products and 2,000 t/a ethephon TK, and setting up supporting and environmental protection facilities. Investment of the project hits USD17.38 million (RMB120 million).

According to previous planning, Jiangsu Corechem's phase II program consists of production lines for 1,000 t/a clethodim TC, 1,400 t/a mesotrione TC, 500 t/a indoxacarb TC, 4,000 t/a ethephon TC, 500 t/a tetrachlorvinphos TC and 12,000 t/a pesticide formulations, and EI report of this program was approved by local government. Of the proposed lines, only the ethephon TC lines have been built up and passed environmental protection acceptance check, while construction of other lines is yet to start. To better respond to market demand and increase product competitiveness, Jiangsu Corechem has decided to replace the previous 12,000 t/a pesticide formulation plan with the new one.





Price update

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

TABLE 14: Ex-works prices of key herbicide raw materials in China, 8 May, 2023

Raw Materials	20230408		20230508	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	12,850	1,867.6	12,000	1,737.77
92% Iminodiacetonitrile	9,300	1,351.65	8,600	1,245.4
99% Isopropylamine	9,550	1,387.98	9,550	1,382.98
98% N-(Phosphonmethyl) Iminodiacetic acid	21,000	3,052.1	19,000	2,751.47
99% Phosphorus trichloride	6,938	1,008.36	5,933	859.18
99.9% Pyridine	29,500	4,287.48	24,000	3,475.54

Note: Ex-works price includes VAT.

Source: CCM

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





TABLE 15: Ex-works prices of main herbicides in China, 8 May, 2023

Product	20230408		20230508	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	17,400	2,528.89	16,300	2,360.47
92% Acetochlor technical	30,500	4,432.82	30,000	4,344.43
97% Atrazine technical	36,000	5,232.18	36,000	5,213.31
96% Bensulfuron-methyl technical	180,000	26,160.89	175,000	25,342.49
92% Butachlor technical	26,000	3,778.8	24,500	3,547.95
95% Clomazone technical	113,000	16,423.23	108,600	15,726.82
95% Cyhalofop-butyl technical	150,000	21,800.74	137,000	19,839.55
97% Diuron technical	44,000	6,394.88	42,000	6,082.2
98% Fenclorim technical	118,000	17,149.92	116,000	16,798.45
95% Fenoxaprop-P-ethyl technical	172,000	24,998.18	170,000	24,618.41
96% Fluroxypyr technical	145,000	21,074.05	138,000	19,984.36
95% Fomesafen technical	135,000	19,620.67	133,900	19,390.62
95% Glufosinate ammonium technical	95,000	13,807.14	80,000	11,585.14
95% Glyphosate technical	36,100	5,246.71	28,800	4,170.65
95% Haloxyfop-P-methyl technical	164,000	23,835.48	160,000	23,170.27
97% Metolachlor technical	55,000	7,993.61	50,000	7,240.71
95% Metsulfuron-methyl technical	135,000	19,620.67	135,000	19,549.92
95% Nicosulfuron technical	187,600	27,265.46	193,000	27,949.14
97% Oxyfluorfen technical	170,000	24,707.51	160,000	23,170.27
95% Pendimethalin technical	61,500	8,938.3	62,000	8,978.48
95% Pretilachlor technical	33,800	4,912.43	33,800	4,894.72
97% Pyrazosulfuron-ethyl technical	235,000	34,154.49	235,000	34,031.34





80% Quinclorac technical	149,700	21,757.14	144,300	20,896.69
95% Quizalofop-P-ethyl technical	215,000	31,247.73	210,000	30,410.98
95% Tribenuron-methyl technical	117,500	17,077.25	117,500	17,015.67
95% Trifluralin technical	40,500	5,886.2	40,500	5,864.98

Note: Ex-works price includes VAT.

Source: CCM

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



TABLE 16: Shanghai port prices of main herbicides in China, 8 May, 2023

Product	20230408		20230508	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	17,900	2,601.56	16,800	2,432.88
92% Acetochlor technical	31,000	4,505.49	30,500	4,416.83
97% Atrazine technical	36,500	5,304.85	36,500	5,285.72
96% Bensulfuron-methyl technical	180,500	26,233.56	175,500	25,414.89
92% Butachlor technical	26,500	3,851.46	25,000	3,620.36
95% Clomazone technical	113,500	16,495.89	109,100	15,799.23
95% Cyhalofop-butyl technical	150,500	21,873.41	137,500	19,911.95
97% Diuron technical	44,500	6,467.55	42,500	6,154.6
98% Fenclorim technical	118,500	17,222.59	116,500	16,870.85
95% Fenoxaprop-P-ethyl technical	172,500	25,070.85	170,500	24,690.82
96% Fluroxypyr technical	145,500	21,146.72	138,500	20,056.77
95% Fomesafen technical	135,500	19,693.34	134,400	19,463.03
95% Glufosinate ammonium technical	95,500	13,879.81	80,500	11,657.54
95% Glyphosate technical	36,600	5,319.38	29,300	4,243.06
95% Haloxyfop-P-methyl technical	164,500	23,908.15	160,500	23,242.68
97% Metolachlor technical	55,500	8,066.27	50,500	7,313.12
95% Metsulfuron-methyl technical	135,500	19,693.34	135,500	19,622.32
95% Nicosulfuron technical	188,100	27,338.13	193,500	28,021.55
97% Oxyfluorfen technical	170,500	24,780.18	160,500	23,242.68
95% Pendimethalin technical	62,000	9,010.97	62,500	9,050.89
95% Pretilachlor technical	34,300	4,985.1	34,300	4,967.13
97% Pyrazosulfuron-ethyl technical	235,500	34,227.16	235,500	34,103.74





80% Quinclorac technical	150,200	21,829.81	144,800	20,969.1
95% Quizalofop-P-ethyl technical	215,500	31,320.4	210,500	30,483.39
95% Tribenuron-methyl technical	118,000	17,149.92	118,000	17,088.08
95% Trifluralin technical	41,000	5,958.87	41,000	5,937.38

*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 May, 2023



TABLE 17: FOB Shanghai prices of main herbicides in China, 8 May, 2023, USD/t

Product	20230408	20230508
98% 2,4-D technical	2,575.83	2,404.29
92% Acetochlor technical	4,422.69	4,334.5
97% Atrazine technical	5,066.52	5,048.25
96% Bensulfuron-methyl technical	25,585.29	24,784.9
92% Butachlor technical	3,828.85	3,594.95
95% Clomazone technical	16,125.27	15,441.5
95% Cyhalofop-butyl technical	20,582.3	18,730.72
97% Diuron technical	6,354.45	6,043.74
98% Fenclorim technical	16,823.33	16,478.56
95% Fenoxaprop-P-ethyl technical	24,457.37	24,085.82
96% Fluroxypyr technical	20,623.15	19,556.78
95% Fomesafen technical	19,230.27	19,004.81
95% Glufosinate ammonium technical	13,035.46	10,937.65
95% Glyphosate technical	5,677.38	4,512.99
95% Haloxyfop-P-methyl technical	23,313.85	22,663.2
97% Metolachlor technical	7,946.19	7,197.76
95% Metsulfuron-methyl technical	19,234.71	19,165.35
95% Nicosulfuron technical	26,638.02	27,305.97
97% Oxyfluorfen technical	23,301.67	21,851.9
Paraquat 42% TK	3,558.86	3,300.44
95% Pendimethalin technical	8,841.5	8,881.24
95% Pretilachlor technical	4,930.38	4,912.6
97% Pyrazosulfuron-ethyl technical	33,356.44	33,236.16





80% Quinclorac technical	21,315.1	20,472.13
95% Quizalofop-P-ethyl technical	30,528.65	29,711.16
95% Tribenuron-methyl technical	16,732.07	16,671.74
95% Trifluralin technical	5,685.76	5,665.26

*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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