

Herbicides China Monthly Report 202401

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Headline

In Jan., the price of major herbicides TC still moved downwards, decreasing by 1.72% MoM on average; compared with last month, the downtrend slowed. Organophosphorus herbicides experienced bigger price fall, while most sulfonylurea and amide herbicides saw the price turn steadier. In general, the price of triazine, dinitroaniline and phenoxyacid herbicides kept quite stable.

It is expected that herbicide TC price will go up in China in H1 2024, but there is low possibility that the price would increase to the 2022 level as global economic downturn will not be over soon and there are no big market gaps to be filled in the short term.

In Jan., most major raw materials of herbicides TC in China had MoM price drop. However, the ex-works price of some raw materials had recovered by late Jan. It is expected that the price of herbicides TC could be supported up by raw material costs after the Chinese Spring Festival in Feb.

In Jan. 2024, both production and sale of herbicides TC were dull. Investigations show that herbicide TC operating rate averages at some 40%. In particular, for glyphosate TC, although the output had MoM increase, not all the producers raised their operating rates; they still stuck to a prudent production plan.

On 23 Jan., the environmental impact report (exposure draft) of Hubei Jixing Chemical Industry Co., Ltd. (Hubei Jixing)'s biochemical method glufosinate-P pilot scale test project was published. Through this project, the company will set foot in herbicide business and develop capacity for high-efficacy low-toxicity herbicides in the future.

The Guidance Catalogue for Industrial Structure Adjustment (2024 Edition) was released in late Dec. 2023 and will come into force on 1 Feb., 2024. The Catalogue still classifies items into three categories: the encouraged, the restrained, and the to-be-eliminated. For the pesticide industry, green high-efficacy pesticides are encouraged, while high-toxicity pesticides and out-dated production equipment are restrained step by step or to be phased out.

In Jan., both the downtrend of FOB price of paraquat TK and the uptrend of ex-works price of pure pyridine in China continued. Although pyridine producers raised the price, it was not accepted by buyers. By late Jan., the pyridine price had turned stable.

In Jan., the ex-works price of diquat TK in China decreased MoM as downstream demand remained sluggish. The product experienced nearly 60% price plunge on a yearly basis.

By late Dec. 2023, altogether 439 herbicide products had been approved of pesticide registration in China for the year 2023. A great majority of them are of low toxicity and the three most popular forms are OD, EC and SL.

In Nov. 2023, China's herbicide formulations were mainly exported to Brazil, the US, Australia, Nigeria, etc.; the export volume was rather stable. In contrast, the import volume of herbicide formulations to China in Nov. more than tripled on a monthly basis; Malaysia remained the largest import origin during this period.







Editor's note

At the beginning of 2024, herbicide TC market remained dull. The price of major herbicides TC moved downwards under weak demand. Nevertheless, herbicide TC producers still had confidence in recovery in the near future as: one the one hand, the price of most herbicides TC has turned much stable; one the other hand, demand for herbicides TC both at home and abroad will be stimulated after the 2024 Chinese Spring Festival, when spring ploughing begins.

The USD/CNY exchange rate in this newsletter is USD1.00 = CNY7.0770 on 2 Jan., 2024, sourced from the People's Bank of China. All the prices mentioned in this newsletter will include the VAT, unless otherwise specified.





Market analysis

Overall herbicide TC price decline narrows in Jan.

Summary: In Jan., the price of major herbicides TC still moved downwards, decreasing by 1.72% MoM on average; compared with last month, the downtrend slowed. Organophosphorus herbicides experienced bigger price fall, while most sulfonylurea and amide herbicides saw the price turn steadier. In general, the price of triazine, dinitroaniline and phenoxyacid herbicides kept quite stable.

In Jan., herbicides TC had an average 1.72% MoM slip in the ex-works price in China under weak downstream demand. Despite the continuous price drop, the falling range has narrowed. That is to say, the price of most herbicides TC turned much stable during Dec. 2023–Jan. 2024. Reasons behind this trend include: strong urge to prop the price up in the producers, consumption of market inventory for some products, and early start of stocking cycle for certain products.





TABLE 1: Monthly ex-works prices of major herbicide TC products in China, Jan. 2024

Category	Product	CAS No.	Ex-works price in Jan. 2024 (RMB/t)	Ex-works price (USD/t)	RMB MoM change
Organophosphorus herbicide	95% Glufosinate ammonium technical	77182-82-2	62,380	8,814	-8.53%
	95% Glyphosate technical	1071-83-6	26,440	3,736	-1.34%
Sulfonylurea herbicide	95% Nicosulfuron technical	111991-09-4	178,000	25,152	-0.56%
	95% Quizalofop-P-ethyl technical	100646-51-3	170,000	24,021	-1.85%
	96% Bensulfuron-methyl technical	83055-99-6	141,000	19,924	-2.76%
	95% Metsulfuron-methyl technical	74223-64-6	135,000	19,076	0.00%
	97% Pyrazosulfuron-ethyl technical	93697-74-6	215,000	30,380	0.00%
	95% Tribenuron-methyl technical	101200-48-0	79,680	11,259	-3.42%
	98% Florasulam technical	145701-23-1	457,900	64,703	0.00%
Amide herbicide	95% Pretilachlor technical	51218-49-6	30,000	4,239	0.00%
	92% Acetochlor technical	34256-82-1	27,100	3,829	-3.56%
	92% Butachlor technical	23184-66-9	21,000	2,967	0.00%
	97% Metolachlor technical	51218-45-2	35,400	5,002	-4.32%
Triazine herbicide	97% Atrazine technical	1912-24-9	29,000	4,098	0.00%
	95% Ametryn technical	834-12-8	40,000	5,652	0.00%
Dinitroaniline herbicide	95% Trifluralin technical	1582-09-8	40,000	5,652	0.00%
	95% Pendimethalin technical	40487-42-1	56,300	7,955	-2.09%
Phenoxyacid herbicide	98% 2,4-D technical	94-75-7	14,260	2,015	-3.65%
	97% MCPA technical	94-74-6	27,800	3,928	-3.74%
Diphenyl ether herbicide	95% Fomesafen technical	72178-02-0	133,900	18,920	0.00%





	97% Oxyfluorfen technical	42874-03-3	131,480	18,578	-3.32%
Aryloxyphenoxypropionic herbicide	95% Cyhalofop-butyl technical	122008-85-9	126,400	17,861	-1.25%
	95% Haloxyfop-P-methyl technical	95977-29-0	112,000	15,826	-3.45%
	95% Clodinafop-propargyl technical	105512-06-9	170,000	24,021	-2.30%
Substituted phenylurea herbicide	97% Diuron technical	330-54-1	37,060	5,237	-0.64%
Pyrimidine herbicide	98% Fenclorim technical	3740-92-9	102,200	14,441	-0.78%
Others	80% Quinclorac technical	84087-01-4	133,000	18,793	0.00%
	85%-90% Clethodim technical	99129-21-2	65,600	9,269	-0.61%

Source:CCM

Organophosphorus herbicides: Replenishment before the Chinese Spring Festival completed; the number of orders declined this month, and thus the price of organophosphorus herbicides such as glufosinate-ammonium TC and glyphosate TC dropped. Glufosinate-ammonium TC price, in particular, reversed the uptrend of the previous month. Investigations show that the number of new orders reduced significantly, and glufosinate-ammonium TC producers mainly fulfilled previous orders this month. Since buyers have forced the price down to a very low level, the producers have to be extremely cautious about accepting new orders. Although producers of organophosphorus herbicides want to raise the price, downstream buyers want to beat the producers down; in this tug of war, the ex-works price of herbicides under this category may fluctuate downward.

Sulfonylurea herbicides: The price of most sulfonylurea herbicides TC has turned steadier from previous decrease. The price of nicosulfuron TC dipped 0.56% MoM, a smaller price change than the 4.30% decline in Dec. 2023. However, some nicosulfuron TC producers hold a rather pessimistic view on price recovery in the near future, as they quote a price that will stay valid till May. Price fall in quizalofop-P-ethyl TC and bensulfuron-methyl TC also narrowed this month as a result of producers' active efforts to maintain a steady price.

Amide herbicides: In general, the price of amide herbicides followed a gradually stabilising trend. In Jan., the prices of pretilachlor TC and butachlor TC were stable, while the prices of acetochlor TC and metolachlor TC fell by 3.56% and 4.32% MoM, respectively. Previously, the producers of acetochlor TC and metolachlor TC strongly propped up the price, but buyers have demanded a lower price and they gained the upper hand this month.

The price of triazine, dinitroaniline and phenoxyacid herbicides kept stable or became steadier. It is worth noting that replenishment purchasing cycle for atrazine TC, clethodim TC, oxyfluorfen TC, etc. has started, which is conducive to stabilising the price from previous drops. As purchase orders come, some market inventories of these herbicides will be consumed.





Increases in herbicide TC price can be expected in H1 2024

Summary: It is expected that herbicide TC price will go up in China in H1 2024, but there is low possibility that the price would increase to the 2022 level as global economic downturn will not be over soon and there are no big market gaps to be filled in the short term.

In 2023, overall price trend of herbicides TC in China was decrease first and gradual approach to stabilisation. It is thus expected that herbicide TC price will go up in China in H1 2024.

There were several times in 2023 that herbicides TC were traded quite badly in traditional peak selling periods, which, from another perspective, indicates that herbicide TC stocks in buyers are at a relatively low level, and this in turn is conducive to future increase in herbicide TC price. From Jan. to March 2023, ex-works price of herbicides TC in China turned from growth to decrease, as weak downstream demand and purchase could not support a rising price. Then from March to May 2023, there were quite large overseas herbicide TC stocks since buyers had made big stockpiles in advance in H2 2022. March, usually a peak season for herbicide TC purchase, unexpectedly became a low season this time, with only small amount of orders placed to make replenishment. Thus the herbicide TC price still declined. From July to Sept. 2023, there were obvious increases in the price of glyphosate TC as orders grew, which helped slow the overall price decrease in herbicide TC price. However, because glyphosate TC traders downsized their inventories, the market was disturbed and in Sept., the short-lived glyphosate TC price increase ended. More importantly, this dampened glyphosate TC producers' expectation of expanding demand in the peak season in Sept.–Oct., as well as the confidence held by buyers in herbicides TC in general. As a result, overall herbicide TC price registered a bigger drop in Sept.

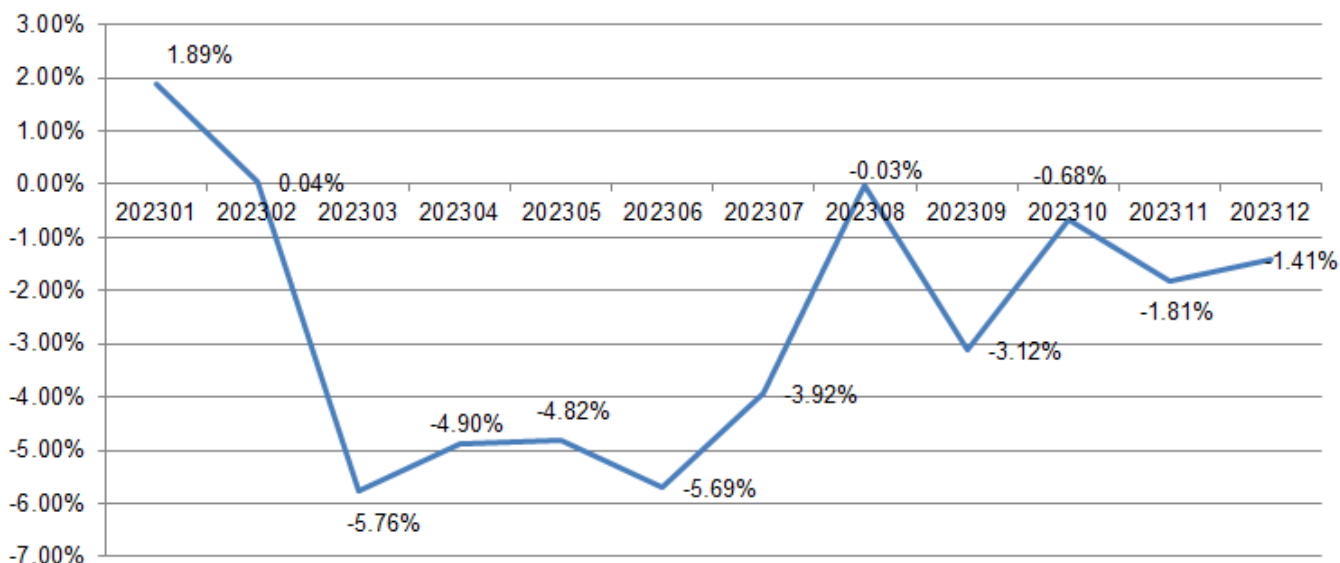
Production of herbicides TC remained basically at a low level in China in 2023; the dull demand made the majority of herbicide TC producers cautious in operation. Sometimes, producers could fulfil new orders with their inventories. It is roughly estimated that in 2023, the operating rate of glyphosate producers averaged below 70% in China, and for other herbicides such as triazines TC and sulfonylureas TC, the rate was much lower, possibly lower than 30%. From another point of view, as market inventories have been on the decline, price recovery seems quite hopeful.

It should be noted that herbicide TC producers have had strong willingness to prop up the price, which will also be a driving force for future price increase. However, chance for a price recovery to 2022 level is slim. After all, global economic downturn will not be over in a short period. Besides, there will not be large needs to be met as overseas herbicide TC purchasers had made orders on need-to basis in 2023.





FIGURE 1: Average growth trend of herbicide TC ex-works price in China, Jan.–Dec. 2023



Source: CCM





TABLE 2: Price trend of herbicides TC in China, Jan.–Dec. 2023

Month	Price trend	Summary
Jan.	The majority of herbicides TC saw their ex-works price go down. Of triazine herbicides, atrazine TC, though it was still in a slow season, had the price propped up by high raw material costs. Most sulfonylurea herbicides experienced MoM price drops. Amide herbicides had different demand trends, but production costs of these herbicides stayed high, affected by raw material prices. For organophosphorus herbicides, shrinking export and low trade volume resulted from dwindled confidence in downstream buyers drove the price down.	Price growth of herbicides TC slowed due to sluggish demand; the price of some main herbicides TC decreased.
Feb.	The majority of herbicides TC saw their ex-works price go down. Of triazine herbicides, atrazine TC, though it was still in a slow season, had the price propped up by high raw material costs. Sulfonylurea herbicides experienced MoM price drops. The price of amide herbicides was lowered, mainly affected by raw material prices. For organophosphorus herbicides, the price went down due to shrinking export, low trade volume resulted from dwindled confidence in downstream buyers, and low-priced formulation products. The price of florasulam TC, a triazolopyrimidine sulfonamide herbicide, remained stable.	Price growth of herbicides TC basically stopped and downtrend was about to start due to sluggish demand.
March	The majority of herbicides TC saw their ex-works price go down. Triazine herbicides had stable price. The prices of amide herbicides were lowered only slightly, as there was a rigid demand. For organophosphorus herbicides, however, greater price declines were witnessed. The price of florasulam TC, a triazolopyrimidine sulfonamide herbicide, remained stable.	Herbicide TC price decreased due to sluggish demand.
April	The price of organophosphorus herbicides was still in the downtrend. Triazine herbicides had quite stable price. Of amide herbicides and sulfonylurea herbicides, some saw the price drop, while some others had steady price. The prices of diquat TK and diuron TC fell.	Herbicide TC price decreased due to sluggish demand.
May	An overall downtrend was witnessed in herbicide TC price. The price of nicosulfuron TC edged up a little, the prices of triazine herbicides and pretilachlor TC were basically stable, but the prices of other main herbicides TC decreased. In particular, big MoM price drops were seen in diquat TK, organophosphorus herbicides and metolachlor TC.	Herbicide TC price decreased due to sluggish demand.
June	Market demand for herbicides did not improve and downstream purchase was lukewarm; prices of some herbicides were set lower. In general, triazine herbicides, amide herbicides and nicosulfuron TC had stable price, while organophosphorus herbicides experienced obvious price fall.	Herbicide TC price decreased due to sluggish demand.
July	Many herbicides TC had stable price. The price of triazine herbicides was stable. For organophosphorus herbicides, the price of glyphosate TC jumped up, while that of glufosinate-ammonium TC went further down. Overseas demand for glyphosate recovered, but production in some domestic glyphosate producers was restricted; glyphosate inventory in the market thus reduced obviously. Glufosinate-ammonium inventory, in contrast, remained at a high level. Downstream demand was weak and orders were made mainly to meet immediate needs.	Herbicide TC price gradually turned steadier. The price of glyphosate TC went up as overseas demand grew.





Aug.	Overall herbicide market had little improvement, and there was strong imbalance between supply and demand. The price of triazine herbicides was stable. For organophosphorus herbicides, the price of glufosinate-ammonium TC continued to fall. Demand for glufosinate-ammonium TC was still dull, while inventories in the market were kept at a high level. Slow trading continued, as new orders came mainly to satisfy the rigid demand. Despite continuous increase in the price of glyphosate TC, some traders started to downsize their inventories as overseas demand grew at a relatively slow pace.	Herbicide TC price fell back, though the price uptrend of glyphosate TC continued.
Sept.	Many herbicides TC had stable price. Of triazine herbicides, some had stable price, while some had price decrease. Of sulfonyleurea herbicides, the prices of quizalofop-P-ethyl TC and bensulfuron-methyl TC were steady, but the price of nicosulfuron TC slipped due to imbalanced supply-demand relation in off-season. For amide herbicides, as application period of these herbicides was basically over, the prices of acetochlor TC and metolachlor TC went down, but the price of pretilachlor TC stayed static. The price of organophosphorus herbicides went down; producers of glufosinate-ammonium TC and glyphosate TC mainly consumed their inventories.	Herbicide TC price decreased due to sluggish demand. Some producers tried not to make concessions in price, which somehow stopped further price fall.
Oct.	Herbicide TC market was rather stable due to low purchase willingness and weak demand. Production costs of triazine herbicides had little change as prices of the intermediates isopropylamine, cyanuric chloride and ethylamine kept stable. For atrazine TC, despite dull demand in an off season, its price basically stabilised. Of sulfonyleurea herbicides, nicosulfuron TC and bensulfuron-methyl TC maintained a stable price, and quizalofop-P-ethyl TC saw its price turned steady as exports improved. The price of glufosinate-ammonium TC and glyphosate TC kept stable under weak demand. However, the price of glufosinate-P TC declined, against the backdrop of growing new glufosinate-P formulation projects and intensified competition. The price of florasulam TC was basically stable.	Herbicide TC price decreased due to sluggish demand. Some producers tried not to make concessions in price, which somehow stopped further price fall.
Nov.	The price of glufosinate-ammonium TC went up against a general downtrend in herbicide TC market. Organophosphorus herbicides had mixed price trends. On average, the price of sulfonyleurea herbicides and amide herbicides went down, while the price of triazine herbicides TC was steady. Particularly, for amide herbicides, buyers held a wait-and-see attitude in general with just a small number of deals made, yet most producers kept normal production; large stocks in the market dragged the price further down.	Producers continued to prop up the price, which is conducive to stabilising the price away from further fall. The price of glufosinate-ammonium TC went up with the support from raw material costs.
Dec.	In general, herbicides TC had MoM price fall. For organophosphorus herbicides, glyphosate TC saw its price drop further as buyers pushed for a lower price, while glufosinate-ammonium TC had the price recovered even though the downstream demand remained weak. For sulfonyleurea herbicides, nicosulfuron TC, quizalofop-P-ethyl TC and bensulfuron-methyl TC experienced MoM price decrease, mainly because orders were rare; metsulfuron-methyl TC and tribenuron-methyl TC had stable price thanks to the producers' successful efforts to prevent price fall. At the end of Dec., the price of these herbicides became steadier. Of amide herbicides, pretilachlor TC and acetochlor TC saw price decline much narrowed though the downtrend continued, while butachlor TC and metolachlor TC saw the price stabilise.	Producers continued to prop up the price, which is conducive to stabilising the price away from further fall. The price of glufosinate-ammonium TC went up with the support from raw material costs.





Source:CCM

In Jan., overall price of major raw materials of herbicides TC goes down

Summary: In Jan., most major raw materials of herbicides TC in China had MoM price drop. However, the ex-works price of some raw materials had recovered by late Jan. It is expected that the price of herbicides TC could be supported up by raw material costs after the Chinese Spring Festival in Feb.

In Jan., most major raw materials of herbicides TC in China had MoM price drop; representatives are phenol, chloroacetic acid, urotropine, liquid ammonia, liquid caustic soda, and liquid chlorine. On average, the price of the major raw materials decreased by 4.64% MoM.

The price downtrend is closely related to the sluggish demand for herbicides TC. As herbicide TC producers could only accept very limited rise in raw material price, the producers of these raw materials had to lower the price to attract more orders. In general, raw material costs did not have much support to herbicide TC price this month.

However, it worth noting that despite MoM decrease in the price, the ex-works price of some raw materials had recovered by late Jan. For instance, in late Jan., the price of phenol reversed the downtrend, and the prices of liquid ammonia and liquid caustic soda went upwards from the mid-Jan. level. In addition, the price uptrend of acetic acid and methanol continued this month. It is expected that raw material costs would play a bigger role in supporting the price of herbicides TC after the Chinese Spring Festival in Feb.

TABLE 3: Price trend of major raw materials of herbicides TC in China, Jan. 2024

Raw material	Jan. 2024 ex-works price, RMB/t	Jan. 2024, USD/t	MoM change (based on RMB price)	Dec. 2023 ex-works price, RMB/t	Dec. 2023, USD/t
Phenol	7,400	1,046	-5.73%	7,850	1,104
Acetic acid	3,300	466	10.00%	3,000	422
Methanol	2,500	353	0.60%	2,485	349
Chloroacetic acid	3,130	442	-8.75%	3,430	482
Urotropine	6,750	954	-2.17%	6,900	970
Liquid ammonia	3,045	430	-14.94%	3,580	503
Liquid caustic soda	755	107	-2.33%	773	109
Liquid chlorine	250	35	-13.79%	290	41

Source:CCM





Company and supply

Herbicide TC producers operate at low level in Jan.

Summary: In Jan. 2024, both production and sale of herbicides TC were dull. Investigations show that herbicide TC operating rate averages at some 40%. In particular, for glyphosate TC, although the output had MoM increase, not all the producers raised their operating rates; they still stuck to a prudent production plan.

In Jan. 2024, overall operating rate in China's herbicide TC producers averages at about 40%, and the output is at a relatively low level. Despite lower output, weak downstream demand makes the supply normal and sufficient for the market. In fact, there even exist quite large inventories for some products.

Organophosphorus herbicides: Investigations in mid-Jan. showed that the output of glyphosate TC increased on a monthly basis, yet the producers still operated their production lines prudently and not all chose to raise the operating rate. For instance, Jingma Chemicals Co., Ltd. had lowered its rate to 90% by mid-Jan., and further cut in output is possible, depending on the volume of orders it receives. Likewise, glufosinate-ammonium TC producers also had cautious production. They mainly fulfil previous orders. Although the number of inquiries went up, the number of deals actually made was small.

Dinitroaniline herbicides: The supply of trifluralin TC has been in good condition, yet few orders have been made, which has led to quite big inventories in the market. Production of pendimethalin TC has been stable. It should be noted that these producers have plan to reduce their outputs as the demand has been sluggish while the supply ample.

For amide herbicides, operating rates of acetochlor TC, butachlor TC and metolachlor TC have remained low due to dull demand. 2,4-D TC producers have been under sales pressure; the output is not large, yet domestic as well as overseas orders have shrunk and some inventories are yet to be consumed. Mounting sales pressure has also been on clethodim TC producers, since inventories are rather large but overseas orders are mainly for replenishment. For nicosulfuron TC, there have come small overseas orders. Lacking orders, nicosulfuron TC producers have run their lines at low rate, and some even suspended the lines.



TABLE 4: Supply of main herbicides TC in China in Jan. 2024

Category	Product	Average operating rate in Jan.	Supply situation in Jan.
Organophosphorus herbicide	Glyphosate TC	62%	Normal supply
	Glufosinate-ammonium TC	65%	Normal supply
Dinitroaniline herbicide	Trifluralin TC	60%	Ample supply
	Pendimethalin TC	50%	Normal supply
Amide herbicide	Acetochlor TC	25%	Normal supply
	Butachlor TC	30%	Normal supply
	Metolachlor TC	30%	Normal supply
Triazine herbicide	Atrazine TC	45%	Normal supply
Phenoxyacid herbicide	2,4-D TC	25%	Normal supply
Cyclohexanedione herbicide	Clethodim TC	30%	Normal supply
Triazinone herbicide	Hexazinone TC	25%	Normal supply
Sulfonylurea herbicide	Nicosulfuron TC	35%	Normal supply

Note:1. The operating rates are the average of the rates in major producers, and the statistics are incomplete.

2. Combined with information on downstream orders, the supply situation is here classified into: tight supply, normal supply and ample supply.

Source:CCM

Hubei Jixing plans glufosinate-P pilot scale test project

Summary: On 23 Jan., the environmental impact report (exposure draft) of Hubei Jixing Chemical Industry Co., Ltd. (Hubei Jixing)'s biochemical method glufosinate-P pilot scale test project was published. Through this project, the company will set foot in herbicide business and develop capacity for high-efficacy low-toxicity herbicides in the future.

On 23 Jan., the environmental impact report (exposure draft) of Hubei Jixing Chemical Industry Co., Ltd. (Hubei Jixing)'s biochemical method glufosinate-P pilot scale test project was published. With an investment of USD4.95 million (RMB35 million), it will construct 15 t/a glufosinate-P capacity, plus by-product capacity of 17.15 t/a ammonium chloride and 10.50 t/a chloroethane on vacant land in its plant. It is expected that this pilot scale test will last three months, and after that the line will be transformed for industrial-scale test. Such tests will lay the foundation and finally lead to large-scale glufosinate-P production.

Hubei Jixing, established in May 2009, is a subsidiary of Hubei Xingfa Chemicals Group Co., Ltd. (Hubei Xingfa). Located in Wanli Industrial Park, Yuan'an County, Yichang City, Hubei Province, Hubei Jixing mainly engages in the R&D, production and sale of yellow



phosphorus and fine phosphorus chemical products. The company is one of the five strategic production bases of Hubei Xingfa. And this project serves Hubei Xingfa's overall strategic plan. Currently, registered capital for Hubei Jixing is RMB100 million. The company now boasts production capacity of 25,000 t/a yellow phosphorus, 20,000 t/a sodium hypophosphite, 15,000 t/a fire retardant, 15,000 t/a calcium hydrogen phosphate, 12,000 t/a tricalcium phosphate (feed grade).

Glufosinate-ammonium is photostable and easily dissolved in water, with low solubility in organic solvents though. Of the three mostly produced herbicides around the world—glyphosate, glufosinate-ammonium and paraquat, glufosinate-ammonium is better aligned with China's green and high-efficacy pesticide development plan. Glufosinate-P, compared with glufosinate-ammonium, delivers better performance as it has lower toxicity and safer application. According to the latest pesticide industry development plan, key tasks in China's herbicide industry include advancing technology and speeding up development of novel products. Directions for future development of herbicides include high selectivity, low toxicity, easy degradability, broad weeding spectrum, forms of suspension or flowable concentrate, and mixed formulation. Indeed, globally, ever growing attention has been paid to the development of novel herbicides, as at least 30 countries have reported in recent years cases that many weeds had developed resistance to herbicides of multiple categories.





Policy

Guidance Catalogue for Industrial Structure Adjustment (2024 Edition) to take effect on 1 Feb.

Summary: The *Guidance Catalogue for Industrial Structure Adjustment (2024 Edition)* was released in late Dec. 2023 and will come into force on 1 Feb., 2024. The Catalogue still classifies items into three categories: the encouraged, the restrained, and the to-be-eliminated. For the pesticide industry, green high-efficacy pesticides are encouraged, while high-toxicity pesticides and out-dated production equipment are restrained step by step or to be phased out.

The *Guidance Catalogue for Industrial Structure Adjustment (2024 Edition)* was revised and released by the National Development and Reform Commission of the People's Republic of China in late Dec. 2023; the Catalogue will come into effect on 1 Feb., 2024. It still classifies items into three categories: the encouraged, the restrained, and the to-be-eliminated. The 2024 edition contains 1,005 items—352 items for the encouraged, 231 for the restrained, and 422 for the to-be-eliminated.

The encouraged mainly cover technologies, equipment and products that are crucial to promoting the economic and social development. The restrained mainly refer to production capacity, production processes and technologies, equipment and products that are in need of upgrade or prohibited from new construction, since they are out-dated, below the entry criteria for certain industries, unqualified for relevant regulations and workplace safety requirements, or not conducive to the realisation of China's carbon peaking and carbon neutrality goals. The to-be-eliminated mainly include out-dated production processes and technologies, equipment and products that are not in accord with related laws and regulations, seriously waste resources or pollute the environment, have big workplace safety hidden risks, and obstruct the realisation of the carbon peaking and carbon neutrality goals. For items not listed in the three categories, and not ruled out in China's laws, regulations and rules, they are allowed to develop further.

For the pesticide industry, the Catalogue reads:

- The encouraged: Development and production of novel pesticides, pesticides in new forms, special purpose intermediates, adjuvants that are safe, environment-friendly and of high-efficacy; production of chiral pesticides and pesticides with stereochemical structure through oriented synthesis methods; development and production of novel biopesticides and new technologies for biopesticides;
- The restrained: Production equipment for high-toxicity high-residue pesticide technical products that have great impact on the environment or the quality of agricultural products (including but not limited to omethoate, terbufos, methidathion, methyl bromide, methomyl, aldicarb, carbofuran, diphacinone-sodium, diphacinone, warfarin, coumatetralyl, bromadiolone, brodifacoum, botulinum toxin, bisultap, aluminium phosphide, organochlorine insecticides, organotin insecticides, dimethyldithiocarbamate fungicides, compound sodium nitrophenolate and compound potassium nitrophenolate, metsulfuron-methyl, demeton, dimethoate, fipronil, carbosulfan, flubendiamide, fenvalerate, acephate, carbendazim and daminozide); production equipment for glyphosate, chlorpyrifos, triazophos, paraquat, chlorothalonil, abamectin, imidacloprid, acetochlor, chloropicrin, alachlor, 2,4-D, acetamiprid, thiamethoxam, atrazine, butachlor, MCPA, ametryn, dicamba, diquat, glufosinate-ammonium, clethodim, mancozeb, trichlorfon, triadimenol, propiconazole, iprodione, paclobutrazol and lime sulphur;
- The to-be-eliminated:
 - Out-dated production processes and equipment: Paraquat (sodium route) production process, dichlorvos (via dehydrochlorination of trichlorfon in aqueous alkali) production process, manual packing/filling process and equipment of small-package ($\leq 1\text{kg}$) pesticide products, production process of pesticide products in dustable powder form (via Raymond mill), and equipment for sodium pentachlorophenol production with hexachlorobenzene as a raw material;





- High-toxicity pesticides: HCH, ethylene dibromide, daminozide, N,N'-methylene-bis(2-amino-1,3,4-thiadizole), nitrofen, chlordimeform, tetramine, fluoroacetamide, sodium fluoroacetate, dibromochloropropane, sulfotep, phosphamidon, gliftor, silatrane, methamidophos, parathion, parathion-methyl, monocrotophos, fosfolan, asomate, urbacide and all arsenic products, mercury compounds, lead compounds, glyphosate AS (with content less than 30%), fosfolan-methyl, calcium phosphide, zine phosphide, fenamiphos, fonofos, magnesium phosphide, cadusafos, coumaphos, sulfotep, terbufos, phorate, 2,4-D butylate, isofenphos-methyl, isocarbophos, ethoprophos, nonyl phenol (pesticide adjuvant), dicofof, chlorsulfuron, and ethametsulfuron-methyl.



Paraquat and pyridine

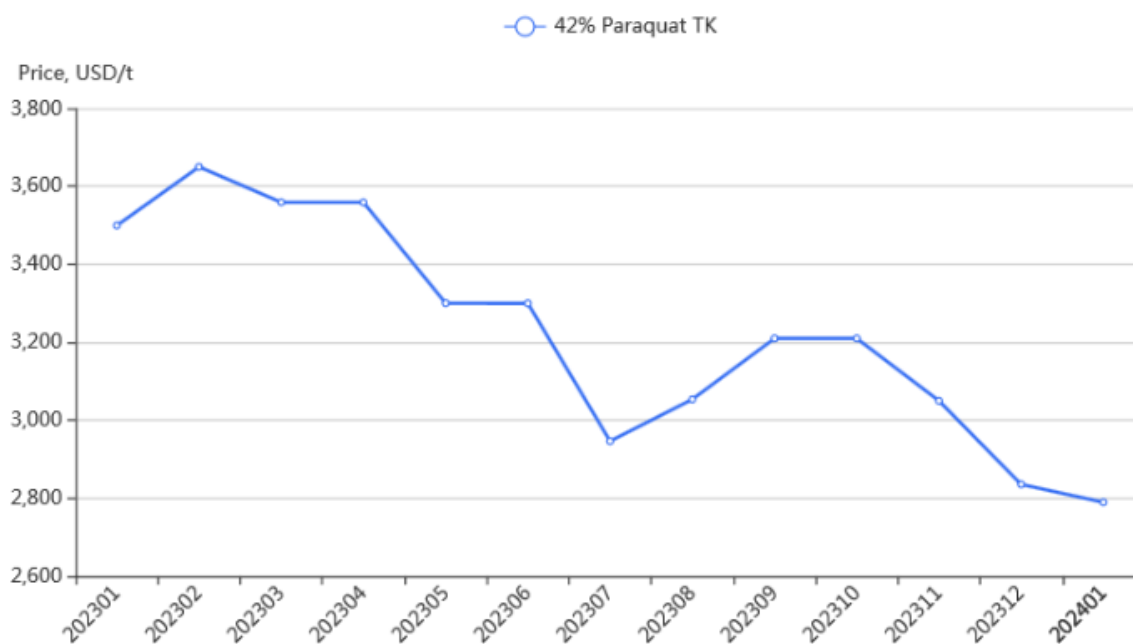
In Jan., pyridine has MoM price increase, paraquat price fall slows

Summary: In Jan., both the downtrend of FOB price of paraquat TK and the uptrend of ex-works price of pure pyridine in China continued. Although pyridine producers raised the price, it was not accepted by buyers. By late Jan., the pyridine price had turned stable.

CCM's price monitoring data show that the FOB price of 42% paraquat TK in China slipped to USD2,790/t in Jan. On a yearly basis, the price still registered a big dive. Despite the continuous price fall, the MoM change reduced from a 7% decline in last month to a 1% dip this month. Slower decrease mainly comes from paraquat suppliers' strong urge to maintain their profit level after seeing rising price of the upstream material pyridine.

The ex-works price of pure pyridine offered by producers continued to move upwards in China this month. Although the price has increased since Nov. 2023, it still remained at a low level on a yearly basis. It should be noted that pyridine producers single-handedly raised the price, but most buyers gave them the cold shoulder. Fundamentally speaking, the demand for pyridine remained dull.

FIGURE 2: Monthly FOB price of 42% paraquat TK in China, Jan. 2023–Jan. 2024



Source:CCM





FIGURE 3: Monthly ex-works price of pure pyridine in China, Jan. 2023–Jan. 2024



Source:CCM

Diquat TK kicks off the new year with price fall

Summary: In Jan., the ex-works price of diquat TK in China decreased MoM as downstream demand remained sluggish. The product experienced nearly 60% price plunge on a yearly basis.

In Jan., the ex-works price of diquat TK in China decreased further, as downstream demand remained sluggish. On the one hand, though there were small amount of overseas orders and orders to replenish stock made by domestic formulation producers, the overall market demand was still dull. On the other hand, diquat TK producers quite firmly intended to stop the price fall and did not make a concession to downstream buyers' counteroffers, which led to the loss of some potential orders that may be placed if a lower price is offered.





FIGURE 4: Monthly ex-works price of 40% diquat TK in China, Jan. 2023–Jan. 2024



Source:CCM





Registration

Herbicide products approved of registration in 2023 total 439 by yearend

Summary: By late Dec. 2023, altogether 439 herbicide products had been approved of pesticide registration in China for the year 2023. A great majority of them are of low toxicity and the three most popular forms are OD, EC and SL.

Data released by the Department of Agrochemical Management of the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) show that, as of 31 Dec., 2023, altogether 439 herbicide products had been approved of pesticide registration in China in 2023. These herbicide products are of low toxicity (87% of the total), mild toxicity or moderate toxicity. The three most popular forms are OD, EC and SL, making up 23%, 20% and 16% of the total, respectively.

Many companies have several herbicide products approved of registration. Of these companies, Shandong Weifang Rainbow Chemical Co., Ltd. has 32 herbicide products approved, followed by Shandong Binnong Technology Co., Ltd. with 14 herbicide products and Zenenorva Crop Protection (Anhui) Co., Ltd. with 13 herbicide products.



TABLE 5: Herbicide products approved of registration in China by form, 2023

No.	Form	Number
1	OD	101
2	EC	88
3	SL	70
4	TC	43
5	SC	41
6	WG	26
7	ME	17
8	WP	10
9	TK	10
10	SE	10
11	EW	7
12	SP	5
13	SG	4
14	CS	3
15	GR	2
16	GW	1
17	WT	1
Total		439

Note: The data are updated to 31 Dec., 2023.

Source: MARA

**TABLE 6:** Herbicide products approved of registration in China by toxicity, 2023

No.	Toxicity	Number
1	Low	381
2	Mild	46
3	Moderate	12
Total		439

Note: The data are updated to 31 Dec., 2023.

Source: MARA

TABLE 7: Major registrants of herbicide products approved of registration in China, 2023

No.	Registrant	Number
1	Shandong Weifang Rainbow Chemical Co., Ltd.	32
2	Shandong Binnong Technology Co., Ltd.	14
3	Zenenorva Crop Protection (Anhui) Co., Ltd.	13
4	Wanrong Crop Technology Co., Ltd.	9
5	Anhui Jintudi Biotechnology Co., Ltd.	8
6	Jilin Jinqiu Pesticide Co., Ltd.	8
7	Xuchang Jian'an Changsheng Daily Chemical Co., Ltd.	7
8	Anhui Yuanjing Crop Protection Co., Ltd.	6
9	Jiangsu Rotam Chemistry Co., Ltd.	6
10	Jiangsu Institute of Ecomones Co., Ltd.	6
11	Dalian Songliao Chemical Industry Co., Ltd.	6
12	Anhui Huaxing Chemical Industry Co., Ltd.	5
13	Anhui Lantian Agricultural Development Co., Ltd.	5
14	Jiangsu Trustchem Biotechnology Co., Ltd.	5
15	Jiangsu Repont Agrochemical Co., Ltd.	5
16	Shandong Runyang Chemical Co., Ltd.	5
17	Weifang Sino-Agri Union Chemical Co., Ltd.	5
18	Anhui Share World Bio-Tech Co., Ltd.	4
19	Hefei Xingyu Chemical Co., Ltd.	4
20	Hunan Agricultural University Heartale Agrochem Co., Ltd.	4
21	Hunan Xinchangshan Agricultural Development Co., Ltd.	4
22	Jiangxi Zhonghe Chemical Co., Ltd.	4
23	Qingdao Hansen Biologic Science Co., Ltd.	4



24	Shandong Aokun Crop Science Co., Ltd.	4
25	Shandong Eshung Industrial Co., Ltd.	4
26	Shandong Zhongxin Kenong Bio-Technology Co., Ltd.	4
27	Tianjin Boke Baisheng Technology Co., Ltd.	4
28	Zhejiang Tianyi Biotechnology Co., Ltd.	4
29	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.	4
	Others	246
	Total	439

Note: The data are updated to 31 Dec., 2023.

Source: MARA



Trade analysis

China's herbicide formulation Imp. volume has big MoM surge in Nov. 2023

Summary: In Nov. 2023, China's herbicide formulations were mainly exported to Brazil, the US, Australia, Nigeria, etc.; the export volume was rather stable. In contrast, the import volume of herbicide formulations to China in Nov. more than tripled on a monthly basis; Malaysia remained the largest import origin during this period.

According to the statistics from General Administration of Customs of China (China Customs), in Nov. 2023, China exported 143,305 tonnes (actual volume, the same hereafter) of herbicide formulation products. The volume was roughly the same as that in the previous month. As regards herbicide formulation imports, in the same month, China imported 1,846 tonnes of herbicide formulation products; the volume ballooned, up 238.83% MoM.

In terms of export, export price averaged USD4.12/kg in Nov. 2023, down 13.81% MoM. Major export destinations of China's herbicide formulations were Brazil, the US, Australia, Nigeria, etc.; the combined volume to the top four destinations accounts for some 44% of the monthly total.

In terms of import, average import price of herbicide formulations plunged to USD16.12/kg in Nov. 2023, down 69.69% MoM. Malaysia was the largest import origin in Nov.; the volume from this origin grew nearly sixfold on a monthly basis and it makes up almost 70% of the monthly total.

TABLE 8: Exports of herbicide formulations from China, Oct. and Nov. 2023

Month	Actual volume, kg	Average price, USD/kg
Nov. 2023	143,305,203	4.12
Oct. 2023	144,157,006	4.78

Source: China Customs



TABLE 9: Major destinations of herbicide formulations exported from China, Oct. and Nov. 2023

No.	Nov. 2023			Oct. 2023		
	Destination	Actual volume, tonne	Share	Destination	Actual volume, tonne	Share
1	Brazil	23,174	16.17%	Brazil	35,089	24.34%
2	The US	16,380	11.43%	Australia	11,979	8.31%
3	Australia	13,354	9.32%	The US	9,178	6.37%
4	Nigeria	10,351	7.22%	Indonesia	6,151	4.27%
5	Ghana	4,834	3.37%	Canada	5,954	4.13%
6	Indonesia	4,698	3.28%	Nigeria	4,997	3.47%
7	Cote d'Ivoire	4,452	3.11%	The Philippines	4,139	2.87%
8	Poland	4,360	3.04%	South Africa	4,066	2.82%
9	Thailand	3,864	2.70%	Argentina	3,892	2.70%
10	The Philippines	3,471	2.42%	Ghana	3,818	2.65%
	Others	54,367	37.94%	Others	54,894	38.07%
	Total	143,305	100.00%	Total	144,157	100.00%

Source: China Customs

TABLE 10: Imports of herbicide formulations to China, Oct. and Nov. 2023

Month	Actual volume, kg	Average price, USD/kg
Nov. 2023	1,846,268	16.12
Oct. 2023	544,901	53.19

Source: China Customs

TABLE 11: Major origins of herbicide formulations to China, Oct. and Nov. 2023

No.	Nov. 2023			Oct. 2023		
	Origin	Actual volume, tonne	Share	Origin	Actual volume, tonne	Share
1	Malaysia	1,281	69.39%	Malaysia	214	39.27%
2	Indonesia	343	18.58%	The US	116	21.28%
3	India	63	3.41%	Indonesia	93	17.06%
4	France	55	2.98%	India	75	13.76%
	Others	104	5.64%	Others	47	8.63%
	Total	1,846	100.00%	Total	545	100.00%

Source: China Customs



Brief news

NATESC publicises consultation results on rape production techniques

The National Agro-Tech Extension and Service Centre (NATESC) announced the consultation results regarding the rape production techniques in late Dec. The consultation advised strengthening disaster prevention and reduction by focusing on three major risks—low temperature, waterlogging and rape diseases, in response to adverse effects such as the current complex growth situation of rape seedlings, changeable weather, and high incidence of disasters. Measures suggested are as follows:

- **Enhancing freezing resistance:**
 - Timely intertilling, weeding, and piling soil and applying fertilisers on roots to improve root winter hardiness;
 - Irrigating appropriately prior to the onset of cold weather to raise surface temperature and thus to mitigate freezing injury;
 - Using chemicals at the right time. For instance, spray uniconazole to prevent overgrown rape plants and promote root growth, and apply brassinolide or fertilisers before a sharp drop in temperature.
- **Preventing winter and spring waterlogging and reducing humidity:** Making sure there are three different kinds of interconnected ditches in one field to avoid waterlogging.
- **Controlling diseases and weeds:**
 - Strengthening monitoring on the development of rape club root, since there is a high and extensive occurrence trend of this disease. For newly infected plants, rooting agents can be applied to stimulate development of new roots, or solutions of fungicides like fluazinam and cyazofamid watered to control development and spread of the disease;
 - Spraying pesticide products such as zineb WP and ethylcin EC to control rape downy mildew when diseased plants account for 20% of the total;
 - Using herbicides such as haloxyfop and clethodim to control gramineous weeds, or timely loosening topsoil and weeding to prevent weeds from growing.

S-Metolachlor to exit the EU market

On 3 Jan., the European Commission (EC) announced a formal resolution that the approval of the active substance S-metolachlor is no longer renewed in accordance with Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning plant protection products (PPPs). Earlier in May 2023, the EC informed the WTO of its intention not to renew approval of S-metolachlor with a draft resolution, and this time, the formal resolution is largely consistent with the previous draft.

The resolution declared that Member States shall withdraw authorisations for PPPs containing S-metolachlor by 23 April 2024, and the grace period for the sale of S-metolachlor products granted by Member States shall expire by 23 July 2024, in accordance with Article 46 of Regulation (EC) No 1107/2009 on grace period.

Weifang Rainbow plans tech-upgrade to switch between 2,4-D and 2,4-D-ethylhexyl production

On 4 Jan., the Weifang Ecological Environment Bureau Binhai Branch announced the acceptance of the environmental impact report of the Third Branch of Shandong Weifang Rainbow Chemical Co., Ltd. (Weifang Rainbow)'s 10,000 t/a 2,4-D equipment technological upgrading and 15,000 t/a 2,4-D-ethylhexyl project. According to the plan, via optimising production technology, this project will transform the company's existing 2,4-D workshop, add 2,4-D-ethylhexyl production process, and improve safety level and environmental protection results.





Upon completion of this project, the company will have production capacity of 10,000 t/a 2,4-D or 15,000 t/a 2,4-D-ethylhexyl (production switches between the two products), 7,000 t/a methyl chloroacetate (with 5,000 t/a for self-use and 2,000 t/a for sale), 12,000 t/a 2,4-dichlorophenol (with 7,500 t/a for self-use and 4,500 t/a for sale), plus capacity for by-products hydrochloric acid (18,000 t/a) and sodium hypochlorite (3,800 t/a).

Henan releases second batch of provincial-level recycling industrial parks

On 29 Dec., 2023, the Department of Industry and Information Technology of Henan Province announced the second batch of provincial-level recycling industrial parks, which consists of six parks: Gongyi Aluminium-Copper New Material Recycling Industrial Park, Luoyang Circular Economy Park, Wugang Venous Industry Park, Yanjin County Resource Recycling Park, Xiangcheng County Recycling Industrial Park, and Jiyuan Sili Circular Economy Industrial Park. Previously in March 2023, Henan publicised the first batch of approved provincial-level recycling industrial parks, which are Huaxian County Energy Resource New Material Recycling Industrial Park, New Energy Battery Recycling Industrial Park in Zhongzhan District of Jiaozuo City, and Changge Circular Economy Industrial Park.

In general, such recycling industrial parks have formed a relatively large-scale and highly-connected circular economy industrial chains, and thus play a leading role in promoting the green, circular, collaborative, and clustered development of industries.

Hebei Lingang plans 180,000 t/a triazine agrochemicals renovation and expansion project

On 8 Jan., acceptance of the environmental impact report of Hebei Lingang Chemical Co., Ltd. (Hebei Lingang)'s 180,000 t/a triazine agrochemicals renovation and expansion project was announced on the official website of Cangzhou Lingang Economic and Technological Development Zone. The project features upgrading and transforming the company's existing production facilities. Upon completion, the company will have 180,850 t/a capacity for triazine agrochemicals, including 107,840 t/a atrazine, 10,090 t/a simazine, 11,130 t/a propazine, 23,030 t/a terbutylazine, 19,750 t/a ametryn, 7,170 t/a prometryn, 300 t/a simetryn, and 1,540 t/a terbutryn.

Hebei Shanli to build capacity for methyldiethoxyphosphine & glufosinate-ammonium

On 24 Jan., an announcement on the official website of Cangzhou Lingang Economic and Technological Development Zone showed that the environmental impact report of Hebei Shanli Technology & Chemistry Co., Ltd. (Hebei Shanli)'s 50,000 t/a methyldiethoxyphosphine and 50,000 t/a glufosinate-ammonium new construction project was to be approved. The company plans to invest USD339.54 million (RMB 2.40 billion), of which 10% or USD33.96 million (RMB240.30 million) is for environmental protection, to build production capacity of 50,000 t/a methyldiethoxyphosphine and 50,000 t/a glufosinate-ammonium in the east area of Cangzhou Lingang Economic and Technological Development Zone, Cangzhou City, Hebei Province.

Liaoning Cynda intends to expand clethodim TK capacity by 5,000 t/a

On 9 Jan., the Huludao Municipal Ecological Environment Bureau announced the acceptance of the environmental impact report of Liaoning Cynda Chemical Co., Ltd. (Liaoning Cynda)'s 5,000 t/a clethodim expansion and 3,600 t/a alcohol-based fuel transformation project. With investment of USD565,211.25 (RMB4 million), the company will expand its clethodim TK capacity by 5,000 t/a in its plant in the Comprehensive Industrial Park of Huludao Economic Development Zone, Huludao City, Liaoning Province, plus utilising methanol, an





intermediate product of clethodim production, to produce alcohol-based fuel with 3,600 t/a capacity.

Jiangsu Yong'an proposes to add 6,000 t/a pendimethalin TC capacity

On 22 Jan., Huai'an Municipal Ecological Environment Bureau announced the acceptance of the environmental impact report of Jiangsu Yong'an Chemical Co., Ltd. (Jiangsu Yong'an)'s 6,000 t/a pendimethalin TC technological upgrading project. With investment of USD14.13 million (RMB100 million), of which 14% or USD1.98 million (RMB14 million) is for environmental protection, the project will build a new 6,000 t/a pendimethalin TC production line in the company's existing No.3 workshop. Upon completion, Jiangsu Yong'an's pendimethalin TC capacity will expand to 17,500.30 t/a, while its production capacity for pendimethalin EC, pendimethalin EW, pendimethalin CS, pendimethalin SC, and methoxyfenozide SC will remain unchanged.

Jiangsu Corechem plans to add 2,000 t/a flumioxazin TC capacity

On 18 Jan., Huai'an Municipal Ecological Environment Bureau announced the acceptance of the environmental impact report of Jiangsu Corechem Co., Ltd. (Jiangsu Corechem)'s 2,000 t/a flumioxazin TC technological transformation project. With investment of USD14.41 million (RMB102 million), of which 1.67% or USD240,214.78 (RMB1.70 million) is for environmental protection, the project plans to construct 2,000 t/a flumioxazin TC capacity in four months. Its production of flumioxazin TC mainly consists of two steps: first to produce a propyne oxazine intermediate and then to produce flumioxazin.

EI report of Anhui Red Sun' 10,000 t/a glufosinate-P project accepted

On 26 Jan., Chizhou Municipal Ecological Environment Bureau announced the acceptance of the environmental impact (EI) report of Anhui Red Sun Biochemistry Co., Ltd. (Anhui Red Sun)'s 10,000 t/a glufosinate-P project. With a planned investment of USD15.26 million (RMB108 million), of which 2.81% or USD429,560.55 (RMB3.04 million) is for environmental protection, the company will build 20,000 t/a production capacity for 50% glufosinate-P TK (or 10,000 t/a when converted to 100% AI basis).





Price update

Ex-works prices of key herbicide raw materials in China, 8 Jan., 2024

TABLE 12: Ex-works prices of key herbicide raw materials in China, 8 Jan., 2024

Raw Materials	20231208		20240108	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% Glycine	12,200	1,715.8	12,040	1,701.29
92% Iminodiacetonitrile	8,600	1,209.5	8,600	1,215.2
99% Isopropylamine	9,550	1,343.1	9,550	1,349.44
98% N-(Phosphonmethyl) Iminodiacetic acid	15,500	2,179.91	15,500	2,190.19
99% Phosphorus trichloride	6,640	933.84	6,038	853.19
99.9% Pyridine	19,300	2,714.33	22,900	3,235.83

Note: Ex-works price includes VAT.

Source: CCM

Ex-works prices of main herbicides in China, 8 Jan., 2024





TABLE 13: Ex-works prices of main herbicides in China, 8 Jan., 2024

Product	20231208		20240108	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	15,200	2,137.71	14,700	2,077.15
92% Acetochlor technical	28,100	3,951.96	27,100	3,829.31
97% Atrazine technical	29,000	4,078.53	29,000	4,097.78
96% Bensulfuron-methyl technical	145,000	20,392.66	145,000	20,488.91
92% Butachlor technical	21,000	2,953.42	21,000	2,967.36
95% Clomazone technical	79,000	11,110.49	79,000	11,162.92
95% Cyhalofop-butyl technical	128,000	18,001.8	128,000	18,086.76
97% Diuron technical	37,300	5,245.84	37,300	5,270.59
98% Fenclorim technical	103,000	14,485.82	103,000	14,554.19
95% Fenoxaprop-P-ethyl technical	140,000	19,689.47	138,000	19,499.79
96% Fluroxypyr technical	95,000	13,360.71	90,000	12,717.25
95% Fomesafen technical	133,900	18,831.57	133,900	18,920.45
95% Glufosinate ammonium technical	69,000	9,704.1	65,100	9,198.81
95% Glyphosate technical	27,600	3,881.64	26,600	3,758.65
95% Haloxyfop-P-methyl technical	116,000	16,314.13	112,000	15,825.91
97% Metolachlor technical	37,000	5,203.65	37,000	5,228.2
95% Metsulfuron-methyl technical	135,000	18,986.27	135,000	19,075.88
95% Nicosulfuron technical	179,000	25,174.39	178,000	25,151.9
97% Oxyfluorfen technical	140,000	19,689.47	133,000	18,793.27
95% Pendimethalin technical	57,500	8,086.75	57,500	8,124.91
95% Pretilachlor technical	30,000	4,219.17	30,000	4,239.08
97% Pyrazosulfuron-ethyl technical	215,000	30,237.4	215,000	30,380.1





80% Quinclorac technical	133,000	18,705	133,000	18,793.27
95% Quizalofop-P-ethyl technical	176,000	24,752.48	170,000	24,021.48
95% Tribenuron-methyl technical	82,500	11,602.72	80,000	11,304.22
95% Trifluralin technical	40,000	5,625.56	40,000	5,652.11

Note: Ex-works price includes VAT.

Source: CCM

Shanghai port prices of main herbicides in China, 8 Jan., 2024



TABLE 14: Shanghai port prices of main herbicides in China, 8 Jan., 2024

Product	20231208		20240108	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
98% 2,4-D technical	15,700	2,208.03	15,200	2,147.8
92% Acetochlor technical	28,600	4,022.28	27,600	3,899.96
97% Atrazine technical	29,500	4,148.85	29,500	4,168.43
96% Bensulfuron-methyl technical	145,500	20,462.98	145,500	20,559.56
92% Butachlor technical	21,500	3,023.74	21,500	3,038.01
95% Clomazone technical	79,500	11,180.81	79,500	11,233.57
95% Cyhalofop-butyl technical	128,500	18,072.12	128,500	18,157.41
97% Diuron technical	37,800	5,316.16	37,800	5,341.25
98% Fenclorim technical	103,500	14,556.14	103,500	14,624.84
95% Fenoxaprop-P-ethyl technical	140,500	19,759.79	138,500	19,570.44
96% Fluroxypyr technical	95,500	13,431.03	90,500	12,787.9
95% Fomesafen technical	134,400	18,901.89	134,400	18,991.1
95% Glufosinate ammonium technical	69,500	9,774.41	65,600	9,269.46
95% Glyphosate technical	28,100	3,951.96	27,100	3,829.31
95% Haloxyfop-P-methyl technical	116,500	16,384.45	112,500	15,896.57
97% Metolachlor technical	37,500	5,273.96	37,500	5,298.86
95% Metsulfuron-methyl technical	135,500	19,056.59	135,500	19,146.53
95% Nicosulfuron technical	179,500	25,244.71	178,500	25,222.55
97% Oxyfluorfen technical	140,500	19,759.79	133,500	18,863.93
95% Pendimethalin technical	58,000	8,157.07	58,000	8,195.56
95% Pretilachlor technical	30,500	4,289.49	30,500	4,309.74
97% Pyrazosulfuron-ethyl technical	215,500	30,307.72	215,500	30,450.76





80% Quinclorac technical	133,500	18,775.32	133,500	18,863.93
95% Quizalofop-P-ethyl technical	176,500	24,822.79	170,500	24,092.13
95% Tribenuron-methyl technical	83,000	11,673.04	80,500	11,374.88
95% Trifluralin technical	40,500	5,695.88	40,500	5,722.76

*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 Jan., 2024





TABLE 15: FOB Shanghai prices of main herbicides in China, 8 Jan., 2024, USD/t

Product	20231208	20240108
98% 2,4-D technical	2,177.4	2,115.71
92% Acetochlor technical	3,942.93	3,820.56
97% Atrazine technical	3,949.4	3,968.04
96% Bensulfuron-methyl technical	19,943.98	20,038.11
92% Butachlor technical	2,992.54	3,006.67
95% Clomazone technical	10,908.92	10,960.4
95% Cyhalofop-butyl technical	16,995.68	17,075.9
97% Diuron technical	5,212.67	5,237.27
98% Fenclorim technical	14,209.97	14,277.04
95% Fenoxaprop-P-ethyl technical	19,263.51	19,077.93
96% Fluroxypyr technical	13,074.85	12,445.16
95% Fomesafen technical	18,456.88	18,543.99
95% Glufosinate ammonium technical	9,161.74	8,684.69
95% Glyphosate technical	4,200.26	4,067.18
95% Haloxyfop-P-methyl technical	15,957.1	15,479.57
97% Metolachlor technical	5,172.78	5,197.19
95% Metsulfuron-methyl technical	18,612.79	18,700.64
95% Nicosulfuron technical	24,595.07	24,573.1
97% Oxyfluorfen technical	18,569.15	17,723.95
42% Paraquat TK	2,835.77	2,789.78
95% Pendimethalin technical	7,999.17	8,036.92
95% Pretilachlor technical	4,234.59	4,254.57
97% Pyrazosulfuron-ethyl technical	29,530.87	29,670.24





80% Quinclorac technical	18,324.97	18,411.45
95% Quizalofop-P-ethyl technical	24,182.86	23,468.69
95% Tribenuron-methyl technical	11,368.2	11,075.74
95% Trifluralin technical	5,434	5,459.65

*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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