

# Insecticides China Monthly Report 202309

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## Headline

The ex-works price of chlorantraniliprole TC in China showed a general downtrend from H2 2022 to Aug. 2023 as a result of intensifying competition in the context of increasing chlorantraniliprole projects. Incomplete statistics show that at least 65,800 t/a chlorantraniliprole TC production capacity has been proposed in 2022 and so far into 2023. And as of 1 Sept., 2023, 14 companies had obtained registration certificates for chlorantraniliprole TC products in China.

In early Sept., prices of some insecticides TC slipped from the late-Aug. level; especially the prices of some pyrethroids TC had larger decreases. However, the prices of imidacloprid TC and acetamiprid TC went up slightly.

In late Sept., nicotinoid insecticides TC had MoM increases in their prices, while some products under categories of organophosphorus, carbamate and pyrethroid insecticides experienced MoM price decreases.

On 25 Aug., local government announced that it planned to approve the EI report of Jiangxi Huidong's pharmaceutical and pesticide intermediate project, which will build production lines of 104.12 t/a methyl 3-(trifluoromethyl)phenylacetate, 99.475 t/a N-(pyrimidin-5-ylmethyl)pyridin-2-amine, 508.60 t/a 2-(3-chloro-5-(trifluoromethyl)-pyridin-2-yl)ethanamine hydrochloride and by-product capacity of 84.643 t/a dimethylamine hydrochloride and 161.31 t/a tert-butyl formate.

Jiangxi Huihe has completed the construction of a chlorantraniliprole TC line, a flonicamid TC line, a spirotetramat TC line, a shared line for dinotefuran TC, flusilazole TC and tebuconazole TC, and supporting facilities.

On 8 Sept., the EI report of Hubei Shengkang's 25,458 t/a specialty new materials project was published at the website of local government.

On 7 Sept., MARA released a notice to solicit opinions on an intended ban on four high-toxicity pesticides: omethoate, aldicarb, carbofuran and methomyl. This ban aims at securing the safety of produce, human beings and animals, and the ecological environment.

In Sept., the Department of Agrochemical Management of MARA approved the registration of 47 insecticide products, which include two TC products. SC is the most popular form in this batch. The majority of the products are of low toxicity.

In late Aug. and early Sept., NATESC released information concerning occurrence trends of diseases & pests on maize and rice in the next phase (basically the period from late Aug. to the end of Sept.).

In June–July 2023, China's insecticide formulations were mainly exported to Brazil, Myanmar, Nigeria, Thailand, etc.; the export volume edged up by 2.21% YoY. However, import volume of insecticide formulations to China contracted by 13.38% YoY in this period. Main import origins were Japan, Singapore, Indonesia, Australia, etc.







### Editor's note

In Sept., prices of the majority of insecticides TC remained weak, and there was not much improvement in downstream purchase. Only nicotinoid insecticides TC saw MoM increases in their prices, mainly due to fluctuations in raw material price.

As to company and supply, chlorantraniliprole production capacity expansion has recently gained momentum in China. Jiangxi Huihe has completed the construction of production lines for multiple pesticides TC, including a chlorantraniliprole TC line; Shaanxi Meibang has intended to build 2,000 t/a chlorantraniliprole TC production capacity; Inner Mongolia Yongtai has planned to build 500 t/a chlorantraniliprole TC capacity, along with an intermediate line. Incomplete statistics show that during Jan. 2022–Aug. 2023, at least 15 enterprises launched their chlorantraniliprole projects, with the combined design capacity reaching 65,800 t/a. Apart from this rage for chlorantraniliprole, some enterprises have also actively launched insecticide intermediate projects to improve competitive power. For instance, Jiangxi Huidong has planned to build capacity for intermediates of triflumezopyrim and fluopicolide, and Hubei Shengkang has planned to build capacity for intermediates of chlorantraniliprole and ecdysone insecticides.

This month, MARA released a notice to solicit opinions on an intended ban on four high-toxicity pesticides: omethoate, aldicarb, carbofuran and methomyl. NATESC gave out forecasts on next-phase occurrence trends of rice and maize diseases & pests. The Department of Agrochemical Management of MARA approved the registration of 47 insecticide products, which include two TC products. SC is the most popular form in this batch. The majority of the products are of low toxicity.

*The USD/CNY exchange rate in this newsletter is USD1.00 = CNY7.1788 on 1 Sept., 2023, sourced from the People's Bank of China. All the prices mentioned in this newsletter will include the VAT, unless otherwise specified.*







## Market analysis

### Ever fiercer competition in China's chlorantraniliprole TC market

Summary: The ex-works price of chlorantraniliprole TC in China showed a general downtrend from H2 2022 to Aug. 2023 as a result of intensifying competition in the context of increasing chlorantraniliprole projects. Incomplete statistics show that at least 65,800 t/a chlorantraniliprole TC production capacity has been proposed in 2022 and so far into 2023. And as of 1 Sept., 2023, 14 companies had obtained registration certificates for chlorantraniliprole TC products in China.

Chlorantraniliprole is a high-efficacy low-toxicity anthranilic diamide insecticide developed by DuPont (now Corteva Agriscience). This novel insecticide, hitting the market in 2007, has characteristics including broad pest-killing spectrum, high insecticidal activity, wide range of applicable crops, long lasting period and good safety profile. Recent years have seen increasing number of registration applications for chlorantraniliprole TC and formulation products in China. Statistics from the China Pesticide Information Network show that as of 1 Sept., 2023, altogether 14 companies had obtained registration certificates for chlorantraniliprole TC products in China.

Since 2021, chlorantraniliprole product pesticide registration as well as chlorantraniliprole production capacity expansion have gained momentum in China. And after 12 Aug., 2022, when the chlorantraniliprole compound patent expired in China, chlorantraniliprole production at domestic market has increased fast. This year, in particular, has witnessed upsurges in chlorantraniliprole output and registration. Moreover, incomplete statistics show during Jan. 2022–Aug. 2023, at least 15 enterprises launched their chlorantraniliprole projects, with the combined design capacity reaching 65,800 t/a. Among them, Inner Mongolia Miraculous Crop Science Co., Ltd. has planned a 20,000 t/a chlorantraniliprole TC project; the capacity ranked first in this wave of investment. Shandong Youdao Chemical Co., Ltd. and Shandong Eshung Industrial Co., Ltd. have also proposed large-scale project, with planned chlorantraniliprole TC capacity of 11,000 t/a and 10,000 t/a, respectively. Besides, before 2022, there was at least 33,900 t/a new capacity for chlorantraniliprole TC proposed in China.

From Jan. to May 2023, the ex-works price of chlorantraniliprole TC in China kept stable, the June price decreased slightly to RMB694,500/t; yet the Sept. price fell to USD76,614/t (RMB550,000/t). There even came rumours that some deals were stricken at about USD55,700/t (RMB400,000/t). Such a downtrend was resulted from hyped influences of big capacity under construction. However, in fact, the supply of chlorantraniliprole TC in the market has not been large, as much planned capacity has not turned active and thus real impacts on market supply have not been exerted yet. It should be admitted that the hype, often told by parties of interest, does reflect the rising enthusiasm in chlorantraniliprole TC in the market. Given the fact the interest in new investment will not subside in the short term, it is expected that the ex-works price of chlorantraniliprole TC will keep falling in China.



TABLE 1: Valid pesticide registration for chlorantraniliprole TC products in China, as of 1 Sept., 2023

No.	Registration number	Product	Valid until	Registrant
1	PD20230469	96% Chlorantraniliprole TC	2028/8/20	Shenyang Harvest Agrochemical Co., Ltd.
2	PD20230304	96% Chlorantraniliprole TC	2028/5/18	Hebei Brilliant Chemical Co., Ltd.
3	PD20181579	98% Chlorantraniliprole TC	2028/4/17	Shandong Weifang Rainbow Chemical Co., Ltd.
4	PD20230140	96% Chlorantraniliprole TC	2028/4/2	Qingdao Hengning Biotechnology Co., Ltd.
5	PD20220399	97% Chlorantraniliprole TC	2027/12/29	Chongqing Huage Biochemical Co., Ltd.
6	PD20220310	96% Chlorantraniliprole TC	2027/12/29	Shandong Aokun Crop Science Co., Ltd.
7	PD20172426	95% Chlorantraniliprole TC	2027/10/17	Inner Mongolia Miraculous Crop Science Co., Ltd.
8	PD20220286	98% Chlorantraniliprole TC	2027/10/8	Shandong Youdao Chemical Co., Ltd.
9	PD20220234	97% Chlorantraniliprole TC	2027/10/8	Lier Chemical Co., Ltd.
10	PD20220216	95% Chlorantraniliprole TC	2027/10/8	Huai'an Glory Chemical Co., Ltd.
11	PD20220078	97% Chlorantraniliprole TC	2027/4/23	Synwill (Yichang) Chemical Co., Ltd.
12	PD20220049	95% Chlorantraniliprole TC	2027/3/24	Xiangshui Zhongshan Bioscience Co., Ltd.
13	PD20101971	95% Chlorantraniliprole TC	2025/9/21	FMC (Shanghai) Agricultural Sciences Co., Ltd.
14	PD20100676	95% Chlorantraniliprole TC	2025/1/15	FMC Corporation

Source: China Pesticide Information Network

TABLE 2: Chlorantraniliprole TC projects proposed in China (incomplete statistics), 2022–Aug. 2023

No.	Enterprise	Parent company of the enterprise	Design capacity for chlorantraniliprole TC, t/a	Project progress
1	Inner Mongolia Miraculous Crop Science Co., Ltd.	Lianyungang Liben Crop Technology Co., Ltd.	20,000	In March 2023, EI report of the project was approved.
2	Shandong Youdao Chemical Co., Ltd.	Shandong Himile Chemicals Co., Ltd.	11,000	The phase I 1,000 t/a chlorantraniliprole TC line has been put into operation. The phase II 10,000 t/a chlorantraniliprole TC lines and supporting capacity for the intermediate 3-bromo-1-(3-chloropyridin-2-yl)-1H-pyrazole-5-carboxylic acid are expected to be put into production in Oct. 2023.
3	Shandong Eshung Industrial Co., Ltd.	/	10,000	By June 2022, the phase I construction had been completed.
4	FMC (Shanghai) Agricultural Sciences Co., Ltd.	/	6,000	In April 2023, EI report of the project was approved.
5	Jingzhou Sancang Chemical Technology Co., Ltd.	Lier Chemical Co., Ltd.	5,000	In June 2023, the project was announced.
6	Hailir Pesticides and Chemicals Group Co., Ltd.	/	3,000	In April 2023, the project was announced.
7	Chongqing Huage Biochemical Co., Ltd.	Nanjing Red Sun Co., Ltd.	2,000	In Aug. 2023, the phase I production lines were operated successfully.
8	Shaanxi Nuo Zheng Biotechnology Co., Ltd.	Shaanxi Meibang Pharmaceutical Group Co., Ltd.	2,000	In July 2023, the parent company announced it would raise funds for a 6,000 t/a pesticide TC project (include 2,000 t/a chlorantraniliprole TC).
9	Anhui Huilong RMF Bioengineering	Anhui Huilong Group RMF Agrochemical Co.,	2,000	In Feb. 2023, construction started.



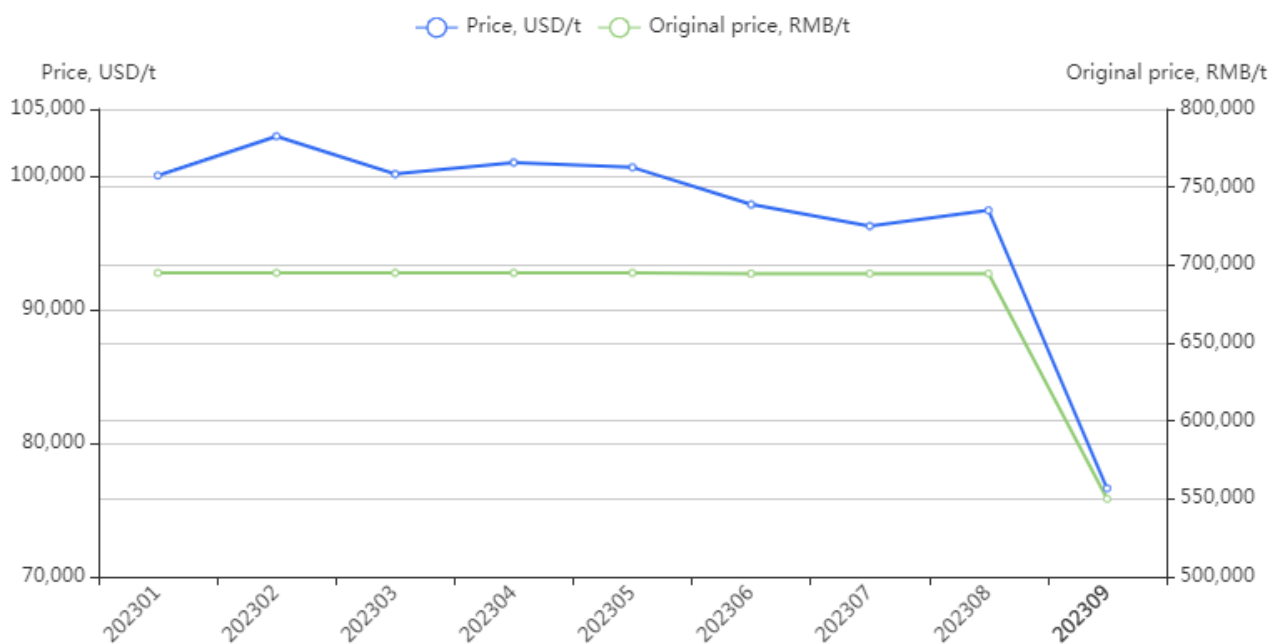


	Co., Ltd.	Ltd.		
10	Huai'an Glory Chemical Co., Ltd.	Jiangsu Flag Chemical Industry Co., Ltd.	1,500	In Jan. 2023, basic environmental impact assessment (EIA) information of the 2,700 t/a pesticide expansion and transformation project was released.
11	Hebei Di'annong Biotechnology Co., Ltd.	Hebei Deyi Technology Group Co., Ltd.	1,000	In Sept. 2022, the project was announced.
12	Gansu Zhongmaotou Chemical Co., Ltd.	/	1,000	In July 2023, EI report of the project was approved.
13	Zhejiang Avilive Chemical Co., Ltd.	Hengdian Group Holdings Limited	500	In Jan. 2023, EI report of the project was approved.
14	Xinjiang Yichen New Material Technology Co., Ltd.	/	500	In Aug. 2023, the project was announced.
15	Guang'an Lier Chemical Co., Ltd.	Lier Chemical Co., Ltd.	300	In Nov. 2022, the project was approved in the company's meeting.
<b>Total</b>			<b>65,800 /</b>	

Source: EI reports of related projects, government websites, company announcements



**FIGURE 1:** Monthly ex-works price of chlorantraniliprole technical in China, Jan.–Sept. 2023



Source:CCM

### Mixed price trends of insecticides TC in early Sept.

**Summary:** In early Sept., prices of some insecticides TC slipped from the late-Aug. level; especially the prices of some pyrethroids TC had larger decreases. However, the prices of imidacloprid TC and acetamiprid TC went up slightly.

In early Sept., a general steady insecticide market was seen, with small price fluctuations. The majority of insecticides TC still faced a weak market. Prices of some insecticides TC slipped from the late-Aug. level; especially the prices of some pyrethroids TC had larger decreases. In contrast, the prices of imidacloprid TC and acetamiprid TC increased slightly. Considering the continued sluggish demand in the insecticide market, an overall stable price is expected in the short term.

**Organophosphorus insecticides:** On a monthly basis, mixed price trends were seen in organophosphorus insecticides TC in early Sept. The ex-works prices of phoxim TC and malathion TC kept stable; the price of profenofos TC dropped slightly, while the price of chlorpyrifos TC kept going up by 1.85% due to tight supply in most producers. In this period, although chlorpyrifos manufacturers Hubei Benxing Agrochemical Co., Ltd., Jiangsu Fengshan Group Co., Ltd. and Zhejiang Xinnong Chemical Co., Ltd. (Zhejiang Xinnong) supplied normally (Zhejiang Xinnong's chlorpyrifos TC is mainly for export), Inner Mongolia Miraculous Crop Science Co., Ltd. and Chongqing Huage Biochemical Co., Ltd. suspended production. Relatively low operating rate has resulted in a general tight supply, which would drive up the price of chlorpyrifos TC slowly in the short term.

**Carbamate insecticides:** Ex-works prices of isoprocarb TC and methomyl TC were stable, while the price of carbofuran TC edged down by 2.00% MoM for unbalanced supply-demand relation.

**Pyrethroid insecticides:** In early Sept., ex-works price of bifenthrin TC remained stable, while prices of lambda-cyhalothrin TC,



cypermethrin TC and deltamethrin TC went down by 2.48%, 6.90% and 1.28% MoM, respectively. Despite steady raw material price and normal supply, weak demand dragged down the prices. For lambda-cyhalothrin, the supply has been ample in the market, as the lines in Shandong Gaoxin Runnong Chemical Co., Ltd., Jiangsu Yangnong Chemical Co., Ltd., Guangdong Liwei Chemical Industry Co., Ltd. and Jiangsu Chunjiang Runtian Agrochemical Co., Ltd. operated normally, though Jiangsu Changlong Agrochemical Co., Ltd. suspended its line. It is projected that pyrethroid insecticide market would remain weak in the short term.

**Nicotinoid insecticides:** Price recoveries have been witnessed recently in insecticides under this category; early-Sept. prices of imidacloprid TC and acetamiprid TC edged up by 1.21% and 0.96% MoM, respectively, as the supplies were tight and the price of 2-chloro-5-(chloromethyl)pyridine (CCMP) was set a little higher. For imidacloprid, most producers halted their lines, except Shandong Sino-Agri United Biotechnology Co., Ltd., Shandong Hailir Chemicals Co., Ltd., Wuzhong Linghang Biological & Pharmaceutical Co., Ltd. and Hebei Yetian Agrochemicals Co., Ltd. operated at a low level, which led to an overall tight supply. It is projected that small increases in the prices of imidacloprid TC and acetamiprid TC would continue, influenced by fluctuations in raw material price.

**TABLE 3:** Ex-works prices of major insecticide TC products in China in early Sept. 2023

Category	Product	Ex-works price (RMB/t)	Ex-works price (USD/t)	RMB MoM change
Organophosphorus insecticide	90% Phoxim technical	39,000	5,432.66	0.00%
	95% Chlorpyrifos technical	38,600	5,376.94	1.85%
	90% Malathion technical	38,000	5,293.36	0.00%
	90% Profenofos technical	74,000	10,308.13	-1.33%
Carbamate insecticide	98% Carbofuran technical	98,000	13,651.31	-2.00%
	98% Methomyl technical	73,900	10,294.20	0.00%
	98% Isoprocarb technical	45,500	6,338.11	0.00%
Pyrethroid insecticide	97% Bifenthrin technical	158,000	22,009.25	0.00%
	95% Lambda-cyhalothrin technical	118,000	16,437.29	-2.48%
	94% Cypermethrin technical	54,000	7,522.15	-6.90%
	98% Deltamethrin technical	385,000	53,630.13	-1.28%
Nicotinoid insecticide	97% Imidacloprid technical	92,000	12,815.51	1.21%
	95% Acetamiprid technical	83,800	11,673.26	0.96%

Source:CCM





## Prices of nicotinoid insecticides TC increase continuously in late Sept.

Summary: In late Sept., nicotinoid insecticides TC had MoM increases in their prices, while some products under categories of organophosphorus, carbamate and pyrethroid insecticides experienced MoM price decreases.

In general, there was not much improvement in downstream purchase of insecticides TC. On a monthly basis, mixed price trends were witnessed in major insecticides TC CCM investigated in late Sept. Except for increases in the prices of nicotinoid insecticides TC, price downward movements were seen in several organophosphorus and pyrethroid insecticides. Main factors for the price changes were supply-demand relation and fluctuations in raw material price.

**Organophosphorus insecticides:** The ex-works price of phoxim TC kept stable, but the prices of profenofos TC, malathion TC and chlorpyrifos TC went down by 6.67%, 7.89% and 1.54% MoM, respectively. The falls were caused by sluggish demand. Regarding the supply of chlorpyrifos TC, the lines in Inner Mongolia Miraculous Crop Science Co., Ltd. and Chongqing Huage Biochemical Co., Ltd. have been in suspension; Shandong Luba Chemical Co., Ltd. and Hubei Benxing Agrochemical Co., Ltd. have resumed supply and Jiangsu Fengshan Group Co., Ltd. and Zhejiang Xinnong Chemical Co., Ltd. have supplied normally. It is expected that the price of chlorpyrifos TC would decline slightly in the short term due to weak demand.

**Carbamate insecticides:** Ex-works prices of isoprocarb TC and methomyl TC were stable in Sept., while the price of carbofuran TC edged down by 2.00% MoM. It is expected that small price drops will be seen in some carbamate insecticides in the future due to unbalanced supply-demand relation.

**Pyrethroid insecticides:** Ex-works prices of bifenthrin TC and deltamethrin TC remained stable, while prices of lambda-cyhalothrin TC and cypermethrin TC went down by 2.48% and 6.90% MoM, respectively. As concerns the supply, Shandong Gaoxin Runnong Chemical Co., Ltd. has resumed the production of lambda-cyhalothrin TC, and Jiangsu Yangnong Chemical Co., Ltd., Guangdong Liwei Chemical Industry Co., Ltd. and Jiangsu Chunjiang Runtian Agrochemical Co., Ltd. have resumed the production of lambda-cyhalothrin TC and bifenthrin TC. However, Jiangsu Changlong Agrochemical Co., Ltd. has suspended its lambda-cyhalothrin TC lines. It is projected that pyrethroid insecticide market would remain weak in the short term, as the general situation of normal supply and slack demand has continued.

**Nicotinoid insecticides:** In late Sept., the prices of imidacloprid TC and acetamiprid TC had MoM rises of 2.67% and 1.34%, respectively. The increases were mainly brought about by rising raw material price. As to imidacloprid TC supply, Shandong Hailir Chemicals Co., Ltd. has resumed its lines, and Shandong Sino-Agri United Biotechnology Co., Ltd., Wuzhong Linghang Biological & Pharmaceutical Co., Ltd. and Hebei Yetian Agrochemicals Co., Ltd. have operated at a low level. It is projected that price increases in nicotinoid insecticides would continue, influenced by fluctuations in raw material price.





TABLE 4: Ex-works prices of major insecticide TC products in China in late Sept. 2023

Category	Product	Ex-works price (RMB/t)	Ex-works price (USD/t)	RMB MoM change
Organophosphorus insecticide	90% Phoxim technical	39,000	5,432.66	0.00%
	95% Chlorpyrifos technical	38,400	5,349.08	-1.54%
	90% Malathion technical	35,000	4,875.47	-7.89%
	90% Profenofos technical	70,000	9,750.93	-6.67%
Carbamate insecticide	98% Carbofuran technical	98,000	13,651.31	-2.00%
	98% Methomyl technical	73,900	10,294.20	0.00%
	98% Isoprocarb technical	45,500	6,338.11	0.00%
Pyrethroid insecticide	97% Bifenthrin technical	158,000	22,009.25	0.00%
	95% Lambda-cyhalothrin technical	118,000	16,437.29	-2.48%
	94% Cypermethrin technical	54,000	7,522.15	-6.90%
	98% Deltamethrin technical	385,000	53,630.13	0.00%
Nicotinoid insecticide	97% Imidacloprid technical	93,330	13,000.78	2.67%
	95% Acetamiprid technical	84,110	11,716.44	1.34%

Source:CCM





## Company and supply

### Jiangxi Huidong to build capacity for intermediates of insecticide triflumezopyrim

Summary: On 25 Aug., local government announced that it planned to approve the EI report of Jiangxi Huidong's pharmaceutical and pesticide intermediate project, which will build production lines of 104.12 t/a methyl 3-(trifluoromethyl)phenylacetate, 99.475 t/a N-(pyrimidin-5-ylmethyl)pyridin-2-amine, 508.60 t/a 2-(3-chloro-5-(trifluoromethyl)-pyridin-2-yl)ethanamine hydrochloride and by-product capacity of 84.643 t/a dimethylamine hydrochloride and 161.31 t/a tert-butyl formate.

On 25 Aug., Nanchang Municipal Bureau of Ecology and Environment announced that it planned to approve the environmental impact (EI) report of Jiangxi Huidong Pharmaceutical Technology Co., Ltd. (Jiangxi Huidong)'s high-efficacy, safe, environment-friendly pharmaceutical and pesticide intermediate project. Construction content of the project involves production lines of 104.12 t/a methyl 3-(trifluoromethyl)phenylacetate, 99.475 t/a N-(pyrimidin-5-ylmethyl)pyridin-2-amine, 508.60 t/a 2-(3-chloro-5-(trifluoromethyl)-pyridin-2-yl)ethanamine hydrochloride and by-product capacity of 84.643 t/a dimethylamine hydrochloride and 161.31 t/a tert-butyl formate. Jiangxi Huidong believes the project will extend its reach along the industrial chain, increase the scale and share of its insecticide business, and improve the company's product portfolio.

Of the planned intermediate products, methyl 3-(trifluoromethyl)phenylacetate is used to produce an intermediate of the insecticide triflumezopyrim, 2-[3-(trifluoromethyl)phenyl]malonic acid, and N-(pyrimidin-5-ylmethyl)pyridin-2-amine is a key intermediate for the synthesis of triflumezopyrim, while 2-(3-chloro-5-(trifluoromethyl)-pyridin-2-yl)ethanamine hydrochloride is an intermediate for the fungicide fluopicolide.

Triflumezopyrim is a novel mesoionic insecticide or zwitterionic insecticide, also a novel pyrimidone compound. It was developed by DuPont (now the Corteva Agriscience). The insecticide, with high efficacy, persistent effect, low dosage need and environment-friendliness, is mainly used to control rice planthoppers, *Empoasca flavescens*, etc. The National Agro-Tech Extension and Service Centre (NATESC) has previously recommended multiple times the use of triflumezopyrim to prevent and control rice planthoppers. It is also effective against a variety of pests including lepidopteran pests, homopteran pests. It is applicable on crops like cotton, rice, maize and soybean.

As far as CCM knows, triflumezopyrim is still under patent protection in China. In 2009, DuPont applied for compound patents for the product under the Patent Cooperation Treaty (PCT), in Europe, the US, China, etc.; these patents would expire in Jan. 2029.

Regarding pesticide registration of triflumezopyrim-based products in China, according to data from the China Pesticide Information Network, as of early Sept. 2023, there had been six triflumezopyrim products approved—one TC product and five formulation products (in forms of SC and WG). Registration certificate holders are: Corteva Agriscience, Shaanxi Biaozheng Crop Science Co., Ltd., Dongguan Ruidefeng Biotechnology Co., Ltd. and Shenzhen Noposion Agrochemicals Co., Ltd. Outside China, triflumezopyrim products have been registered in the Philippines, Malaysia, Thailand, India, South Korea, Indonesia, Japan, Vietnam, etc., but so far there has been no registration granted in the European Union, Australia and New Zealand.







In recent years, several triflumezopyrim-based products have hit the market. In June 2020, Syngenta Group Co., Ltd.'s Shatu, a triflumezopyrim 20% WG product, made its debut. In June 2022, Corteva Agriscience launched Bailianglong, a triflumezopyrim 10% SC product, to prevent and control rice planthoppers. In July 2023, Dhanuka Agritech Ltd., a leading India-based agri-input company launched DEFEND<sup>®</sup>, a SC product containing 10% triflumezopyrim, which could offer protection from first-generation brown planthoppers and white-backed planthoppers. It is believed that more triflumezopyrim-based single formulations and mixed formulations will come out, along with more triflumezopyrim registrations in wider world, and thus the scale of triflumezopyrim market will keep expanding.

### **Jiangxi Huihe completes construction of production lines for multiple pesticides TC**

Summary: Jiangxi Huihe has completed the construction of a chlorantraniliprole TC line, a flonicamid TC line, a spirotetramat TC line, a shared line for dinotefuran TC, flusilazole TC and tebuconazole TC, and supporting facilities.

In early Sept., CCM learned from Jiangxi Huihe Chemical Co., Ltd. (Jiangxi Huihe) that it had built up all the production lines and facilities planned in the 3,000 t/a high-efficacy pesticide project, and all the lines had gone into trial run by mid-Aug. According to the company's 3,000 t/a project plan, production capacity of 600 t/a chlorantraniliprole TC, 500 t/a dinotefuran TC, 500 t/a flonicamid TC, 300 t/a spirotetramat TC, 200 t/a flusilazole TC, 900 t/a tebuconazole TC would be built. Of the planned products, chlorantraniliprole, dinotefuran, flonicamid and spirotetramat are trend insecticides in today's market, and flusilazole and tebuconazole are fungicides. The products chlorantraniliprole TC, flonicamid TC and spirotetramat TC have their specific lines, while dinotefuran TC, flusilazole TC and tebuconazole TC share the same production line. In fact, since Sept. 2022, parts of the lines have already entered trial run. This time, after the whole project was finished, a full-scale trial production has started, which would help keep the operation of shared line in good shape and properly tune the equipment up to optimal state.

As regards Jiangxi Huihe's pesticide registration resources, so far the company has obtained certificates for dinotefuran TC, flonicamid TC, spirotetramat TC, flusilazole TC and tebuconazole TC. It has also initiated the application process for chlorantraniliprole TC registration, and there is high possibility for an approval.

Jiangxi Huihe is a wholly-owned subsidiary of Jiangxi Zhengbang Crop Protection Co., Ltd. (Jiangxi Zhengbang). It is located in the Xinghuo Industrial Park, Yongxiu County, Jiujiang City, Jiangxi Province. This Xinghuo Industrial Park is a recognised chemical park and pesticide industry is one of the industries the park is positioned to develop. Many pesticide enterprises have also settled in the park.

The parent company Jiangxi Zhengbang is a comprehensive pesticide conglomerate. It has set up several production bases, and Jiangxi Huihe is one of its key bases. In recent years, to better serve the overall development strategy of Jiangxi Zhengbang, Jiangxi Huihe has increased investment in pesticide projects, making full use of the reserved land in its plant as well as favourable policy support offered by the park.

In 2021, Jiangxi Huihe brought its crop protection formulation full automation project (phase I) into normal operation, which greatly





expanded its production capacity for pesticide formulations, up by 25,650 t/a. The phase II is currently under construction, which will add another 24,350 t/a pesticide formulation capacity once completed. At present, Jiangxi Huihe boasts active production facilities for prochloraz TC and a series of pesticide formulation products, besides the newly-built trial-running lines. In general, its production capacity for pesticide formulations far exceeds that for TC products.

That is also the general picture in Jiangxi Zhengbang, with the production capacity in all of its production bases combined. Jiangxi Zhengbang's overall pesticide formulation business is way larger than its pesticide TC business. It is well known that expenses on the purchase of TC products usually make up great proportion of total cost in the production of formulations. Once there are price hikes in the pesticides TC it purchases or there is a shortage of some TC products, Jiangxi Zhengbang will face mounting cost or insufficient raw materials, which will deliver a heavy blow to its formulation business.

### **Hubei Shengkang plans to build 25,458 t/a specialty new materials project**

Summary: On 8 Sept., the EI report of Hubei Shengkang's 25,458 t/a specialty new materials project was published at the website of local government.

On 8 Sept., the environmental impact (EI) report of Hubei Shengkang Chemical Co., Ltd. (Hubei Shengkang)'s 25,458 t/a specialty new materials project was published at the website of Yichang Municipal Bureau of Ecology and Environment. The company plans to invest USD69.65 million (RMB500 million) in this project, which is to be built in two phases. The construction in the B zone of Yaojiagang Chemical Park, Zhijiang City, Yichang City, Hubei Province, is expected to start in Dec. 2023; the phase I program is projected to be finished in July 2025, and the phase II to be completed in Oct. 2026. Hubei Shengkang expects annual sales would reach USD191.47 million (RMB1,374.51 million) once the new lines are put into production at full steam.

As regards products and design capacity, the phase I includes production capacity of 2,000 t/a 3,5-dimethylbenzoic acid, 5,250 t/a 3-methyl-2-nitrobenzoic acid, 3,257 t/a 5-methyl-2-nitrobenzoic acid, 1,472 t/a 3-methyl-4-nitrobenzoic acid, 2,500 t/a 2-amino-5-chloro-N,3-dimethylbenzamide, along with capacity for the raw material 2,4-diaminobenzenesulfonic acid and the by-product nitric acid; the phase II includes 5,250 t/a 3-methyl-2-nitrobenzoic acid, 3,257 t/a 5-methyl-2-nitrobenzoic acid, 1,472 t/a 3-methyl-4-nitrobenzoic acid, along with capacity for 2,4-diaminobenzenesulfonic acid and nitric acid. Of the planned products, 2-amino-5-chloro-N,3-dimethylbenzamide is a key intermediate for the insecticide chlorantraniliprole, and 3,5-dimethylbenzoic acid is an intermediate for the synthesis of ecdysone insecticides tebufenozide and methoxyfenozide.

Previously on 25 July this year, Yingde Greatchem Chemicals Co., Ltd. (Guangdong Greatchem) made an announcement that it would establish a wholly-owned subsidiary—Hubei Shengkang, and signed the Cooperation Agreement on the Construction of Specialty Chemical & New Material Base with the Administration Committee of Yichang High-tech Industrial Development Zone. According to the agreement, Guangdong Greatchem would invest USD348.25 million (RMB2,500 million) to construct a specialty chemical & new material base in the Tianjiahe Area of Baiyang Industrial Park, Yichang City, Hubei Province. This time, the 25,458 t/a specialty new materials project is the phase one of the large-scale production base project. If the new capacity planned could not be used effectively, the company





would be challenged by the risk of overcapacity.

Guangdong Greatchem, established in Oct. 2003, is headquartered in the special-purpose agrochemical industry chain base in the Yingde City of Guangdong Province. The national-level high-tech company is specialised in the R&D, production and sale of pesticide TC, formulations and intermediates. As far as CCM learns, Guangdong Greatchem has 1,000 t/a methoxyfenozide TC technological upgrade project, 10,000 t/a captan project and 4,500 t/a specialty chemicals project currently under construction. With years of experience, the company has formed a product matrix represented by three series: insecticides including bifentazate and beta-cypermethrin, fungicides including thifluzamide, captan, folpet, etridiazole and carboxin, and herbicides including phenmedipham, desmedipham and ethofumesate. Guangdong Greatchem leads in terms of production technique, product quality and sales volume in the markets of bifentazate, cypermethrin series, captan, folpet, thifluzamide and etridiazole. The company believes that as all these projects proceed, it will expand production capacity for products that with advantages in the market, enrich its product portfolio, maintain its competitiveness, and boost business scale and profitability.





## Policy

### MARA solicits opinions on intended ban on omethoate, aldicarb, carbofuran and methomyl

Summary: On 7 Sept., MARA released a notice to solicit opinions on an intended ban on four high-toxicity pesticides: omethoate, aldicarb, carbofuran and methomyl. This ban aims at securing the safety of produce, human beings and animals, and the ecological environment.

On 7 Sept., the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) released a notice to solicit opinions on an intended ban on four high-toxicity pesticides: omethoate, aldicarb, carbofuran and methomyl. MARA proposed to revoke pesticide registrations for formulation products containing the four active ingredients (AIs), and prohibit production of these AIs since 1 Dec., 2023 (the already legitimately produced products are allowed for use and sale within warranty period), and to ban the use and sale of such products since 1 Dec., 2025; only the production of export-oriented TC products of the four AIs shall be retained, and the production will be supervised and managed in a closed-loop operation. The notice is made after deliberations in Pesticide Registration Review Committee and based upon risk assessments; it is in accordance with the *Food Safety Law of the People's Republic of China* and the *Regulation on Pesticide Administration*. The potential ban aims at securing the safety of produce, human beings and animals, and the ecological environment.

Currently, altogether 52 varieties have been listed as banned pesticides, and 16 varieties as pesticides with restricted use in China. Omethoate, aldicarb, carbofuran and methomyl still belong to the restricted group.

The 52 prohibited pesticide varieties are: HCH, DDT, campechlor, dibromochloropropane, chlordimeform, ethylene dibromide, nitrofen, aldrin, dieldrin, mercury compounds, arsenic, lead, N,N'-methylene-bis(2-amino-1,3,4-thiadizole), fluoroacetamide, gliflor, tetramine, sodium fluoroacetate, silatrane, methamidophos, parathion, parathion-methyl, monocrotophos, phosphamidon, fenamiphos, fonofos, phosfolan-methyl, calcium phosphide, magnesium phosphide, zine phosphide, cadusafos, coumaphos, sulfotep, terbufos, chlorsulfuron, ethametsulfuron-methyl, metsulfuron-methyl, asomate, urbacide, dicofol, lindane, endosulfan, sulfluramid, methidathion, paraquat, mirex, chlordane, 2,4-D butylate, phorate, isofenphos-methyl, isocarbophos, ethoprophos and methyl bromide. Specifically, phorate, isofenphos-methyl, isocarbophos and ethoprophos are still in a transitional period, which will last until 1 Sept., 2024. During this period, prohibited application fields of these pesticide varieties are vegetables, melons and fruits, tea plants, fungi and Chinese medicinal herbs, and for phorate and isofenphos-methyl, the range also include sugarcane; meanwhile, the four varieties could not be used to control sanitary pests and pests & diseases on water plants. After the transitional period, sale and use of the four varieties are no longer allowed. As regards methyl bromide, it could only be used in quarantine fumigation treatment.



TABLE 5: 16 Pesticides with restricted uses in China, 2023

No.	Pesticide	Scope of prohibited use
1	Omethoate, methomyl and aldicarb	Prohibited on vegetables, melons and fruits, tea plants, fungi and Chinese medicinal herbs; prohibited to be used to control sanitary pests and pests & diseases on water plants
2	Carbofuran	Prohibited on vegetables, melons and fruits, tea plants, fungi, Chinese medicinal herbs and sugarcane; prohibited to be used to control sanitary pests and pests & diseases on water plants
3	Demeton, phosfolan and isazofos	Prohibited on vegetables, melons and fruits, tea plants and Chinese medicinal herbs
4	Acephate, carbosulfan and dimethoate	Prohibited on vegetables, melons and fruits, tea plants, fungi and Chinese medicinal herbs
5	Chlorpyrifos and triazophos	Prohibited on vegetables
6	Daminozide	Prohibited on peanut
7	Fenvalerate	Prohibited on tea plants
8	Fipronil	Prohibited on all crops (except used as seed dressing agent on dry crops like maize)
9	Flubendiamide	Prohibited on rice

Source: Department of Agriculture and Rural Affairs of Liaoning Province



## Registration

### 47 Insecticide products approved of registration in Sept.

Summary: In Sept., the Department of Agrochemical Management of MARA approved the registration of 47 insecticide products, which include two TC products. SC is the most popular form in this batch. The majority of the products are of low toxicity.

On 8 Sept., the Department of Agrochemical Management of the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) released a batch of pesticide products approved of registration. Of the approved 47 insecticide products, two are TC products—a 96% chlorantraniliprole TC from Shenyang Harvest Agrochemical Co., Ltd. and a 98% cyflumetofen TC from Shaanxi Meibang Pharmaceutical Group Co., Ltd.

The majority of the products are of low toxicity, and popular forms of formulation products are SC, GR and WG. In this batch, altogether six registrants have at least two insecticide products approved of registration; of them, Shandong Weifang Rainbow Chemical Co., Ltd. (Weifang Rainbow) ranks first with five products approved. It is worth noting that all of Weifang Rainbow's approved insecticide products this time are export-only products, which makes a lion's share of the total 7 export-only insecticide products approved in Sept.

**TABLE 6:** Insecticide products approved of registration by toxicity released in Sept. 2023

No.	Toxicity	Number
1	Low	31
2	Mild	10
3	Moderate	4
4	Low (TC: highly toxic)	2
<b>Total</b>		<b>47</b>

Source: MARA





**TABLE 7:** Insecticide products approved of registration by form released in Sept. 2023

No.	Form	Number
1	SC	24
2	GR	6
3	WG	6
4	FS	3
5	OD	2
6	TC	2
7	SL	1
8	WP	1
9	CS	1
10	ME	1
<b>Total</b>		<b>47</b>

Source: MARA

**TABLE 8:** Insecticide TC products approved of registration released in Sept. 2023

No.	Registrant	Product
1	Shenyang Harvest Agrochemical Co., Ltd.	96% Chlorantraniliprole
2	Shaanxi Meibang Pharmaceutical Group Co., Ltd.	98% Cyflumetofen

Source: MARA



**TABLE 9:** Registrants with at least two insecticide products approved of registration released in Sept. 2023

No.	Registrant	Number
1	Shandong Weifang Rainbow Chemical Co., Ltd.	5
2	Shaanxi Meibang Pharmaceutical Group Co., Ltd.	2
3	Shaanxi Dongpeng Kaiyuan Agricultural Technology Co., Ltd.	2
4	Anhui Yuanjing Crop Protection Co., Ltd.	2
5	Shandong Dongyuan Bio-Technology Co., Ltd.	2
6	Shandong Yuanfeng Biotechnology Co., Ltd.	2

Source: MARA





## Pest

### NATESC gives out next-phase occurrence trends of rice and maize diseases & pests

Summary: In late Aug. and early Sept., NATESC released information concerning occurrence trends of diseases & pests on maize and rice in the next phase (basically the period from late Aug. to the end of Sept.).

In late Aug. and early Sept., the National Agro-Tech Extension and Service Centre (NATESC) released information concerning occurrence trends of diseases & pests on maize and rice in the next phase (basically the period from late Aug. to the end of Sept.).

#### - Maize

In late Aug., maize crops were tall with quite closed canopy and grew vigorously. That is a critical period for yield formation. Nutritional situations of the plants and environment in the fields provide favourable conditions for the occurrence of diseases & pests. Besides, precipitation in Northeast China, eastern and southern parts of North China, eastern Jiangnan region, most parts of South China, eastern Southwest China, south-eastern Northwest China, etc. was 20% to 50% more than that in the same period in recent years, and in certain local areas 60% or even 100% more was witnessed. That promoted the spread of epidemic diseases and migratory pests.

NATESC estimated that in the next phase, there would be relatively heavy occurrence of major diseases & pests on maize. Specifically,

- Third-generation armyworms might occur heavily in some local areas in Northeast China. Total occurrence area in China would reach 2 million ha;
- Fourth-generation *Helicoverpa armigera*, second- and third-generation corn borers, peach pyralid moth, beet armyworm and some other pests damage ears of plants would deliver heavier damages in Northeast China, North China, Huang-Huai area, Northwest China, etc. Total occurrence area in China would reach 12 million ha;
- *Spodoptera frugiperda* would occur relatively heavily on late-sown summer maize and autumn maize across China, and in some local areas in Huang-Huai-Hai region and Northwest China there is possibility of intensive occurrence. Total occurrence area in China would reach 0.67 million ha;
- Southern maize rust might occur relatively heavily or worse even in Huang-Huai-Hai region, and occur heavily in areas along the path that previous typhoons moved northward. From late Aug. to early Sept., symptoms would display in large areas, and the peak time for the epidemic would last till mid-Sept. Total occurrence area in China would reach 5.33 million ha;
- Foliar diseases like maize northern leaf blight, maize brown spot, maize gray leaf spot and *Curvularia* maize leaf spot should be guarded against in northern parts of China where precipitation above normal level has been encountered.

#### - Rice

Entering autumn, single cropping rice in Southwest China and Northeast China growing areas has come into ripening stage in succession, and thus the tone has been set for the general disease and pest situation in the fields. In rice growing areas in Jiangnan region, the middle and lower reaches of the Yangtze River and Yangtze-Huaihe region, mid-season rice crops are in the heading-and-milk stage, and in South China and Jiangnan region, double cropping late rice crops are in the tillering-and-booting period; attacks of major diseases and pests are still developing, and in certain areas there are signs of heavy occurrence. As of 31 Aug., 2023, accumulated occurrence area of diseases and pests on rice had totalled 45.33 million ha this year in China, up 14.7% YoY. Considering the current disease and pest situation, host growth stage and weather conditions in the near future, NATESC estimated that there are high risks of outbreaks of rice leaf rollers and rice planthoppers (the two major migratory pests on rice), of outbreak of rice stem borers, and of spread of rice bacterial





diseases in areas affected by typhoons. NATESC also projected that peak time for attacks of major diseases and pests would last till the end of Sept.

Based upon growth stages of mid-season rice and double cropping late rice in respective growing areas aforementioned, NATESC believes Cold Dew wind would come later than usual and there are some two weeks to one month for host crops to keep developing, which provide suitable conditions for the occurrence of major diseases and pests. Moreover, the National Climate Centre forecasted that in Sept., temperature in South China, Jiangnan region and the middle and lower reaches of the Yangtze River would be close to or higher than that in the same period in recent years; in particular, in most parts of Fujian, southern part of Jiangxi, Guangdong and Hainan, there would be one to two degrees Celsius higher than usual, which provides favourable conditions for pest breeding and infestation. In the next 10 days (starting from 4 Sept.), central and eastern parts of South China, eastern and southern parts of Jiangnan region, and Yangtze-Huaihe region would have precipitation above normal level. In addition, two to three tropical cyclones would land or affect eastern coastal areas, and the affected areas would experience continuous rainfall and gales. Such weather conditions are in the favour of the two major migratory pests on rice; they would cross regions and cause wide damages. Besides, efforts should be made to guard against the spread of rice bacterial diseases, which may come after mechanical wounds on crops.



### Trade analysis

#### China's insecticide formulation exports have YoY increase in June–July, but the imports see YoY decrease

Summary: In June–July 2023, China's insecticide formulations were mainly exported to Brazil, Myanmar, Nigeria, Thailand, etc.; the export volume edged up by 2.21% YoY. However, import volume of insecticide formulations to China contracted by 13.38% YoY in this period. Main import origins were Japan, Singapore, Indonesia, Australia, etc.

According to statistics from General Administration of Customs of China (China Customs), in June–July 2023, China exported 65,392.21 tonnes (actual volume, the same hereafter) of insecticide formulation products to major destinations including Brazil, Myanmar, Nigeria and Thailand. Compared with the export volume achieved in June–July 2022, this year's figure went up by 2.21%, or an increase of some 1,416 tonnes. As regards insecticide formulation imports, in the same period, China imported 922.73 tonnes of insecticide formulation products; the import volume dropped by 13.38% YoY, with a reduction of some 143 tonnes. Main import origins were Japan, Singapore, Indonesia, Australia, etc.

In terms of export, average export price during June–July 2023 stood at USD4.72/kg, down 25.56% YoY, mainly affected by general oversupply in the market. Of the major export destinations in this period, Brazil topped the list with 10,037 tonnes, over 4,400 tonnes more than the volume to second-place Myanmar. In these two months, Laos had the biggest YoY growth rate in terms of the volume, almost 30 times of that in June–July 2022, followed by Cote d'Ivoire and Myanmar, both with more than a double. In contrast, Vietnam had its volume nearly halved, down from 3,197 tonnes to 1,620 tonnes.

In terms of import, import price of insecticide formulations averaged at USD26.82/kg during June–July 2023, down 9.47% YoY. About 37% of China's insecticide formulation imports came from Japan in these two months. On a year-on-year basis, Singapore and Australia saw their volume expand quickly, while the US had the greatest fall in the volume.

**TABLE 10:** June and July exports of insecticide formulations from China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
June	30,617,105	4.53	29,328,367	6.56
July	34,775,109	4.88	34,647,528	6.14
<b>Total</b>	<b>65,392,214</b>	<b>4.72</b>	<b>63,975,895</b>	<b>6.34</b>

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

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

Source:China Customs



TABLE 11: Major destinations of insecticide formulations exported from China, June–July 2023 vs June–July 2022

No.	June–July 2023			June–July 2022		
	Destination	Volume, tonne	Share	Destination	Volume, tonne	Share
1	Brazil	10,037	15.35%	Brazil	8,722	13.63%
2	Myanmar	5,615	8.59%	Thailand	4,436	6.93%
3	Nigeria	4,928	7.54%	Nigeria	4,419	6.91%
4	Thailand	4,042	6.18%	Vietnam	3,197	5.00%
5	Indonesia	2,510	3.84%	Myanmar	2,795	4.37%
6	Laos	2,434	3.72%	Indonesia	2,767	4.32%
7	Cote d'Ivoire	2,234	3.42%	Bangladesh	2,644	4.13%
8	Bangladesh	2,193	3.35%	Pakistan	2,147	3.36%
9	The Philippines	2,021	3.09%	Ghana	1,981	3.10%
10	Chile	1,752	2.68%	Cambodia	1,789	2.80%
11	Vietnam	1,620	2.48%	The Philippines	1,788	2.80%
12	Ghana	1,529	2.34%	Chile	1,506	2.35%
13	Paraguay	1,468	2.24%	Paraguay	1,385	2.17%
14	Cambodia	1,279	1.96%	Kenya	1,371	2.14%
15	Kenya	1,077	1.65%	Australia	1,241	1.94%

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

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

Source:China Customs





**TABLE 12:** June and July imports of insecticide formulations to China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
June	622,547	26.62	568,422	33.88
July	300,186	27.21	496,840	24.75
<b>Total</b>	<b>922,733</b>	<b>26.82</b>	<b>1,065,262</b>	<b>29.62</b>

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

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

Source:China Customs

**TABLE 13:** Major origins of insecticide formulations imported to China, June–July 2023 vs June–July 2022

No.	June–July 2023			June–July 2022		
	Origin	Volume, tonne	Share	Origin	Volume, tonne	Share
1	Japan	340	36.85%	Japan	340	31.92%
2	Singapore	125	13.51%	The US	169	15.82%
3	Indonesia	116	12.52%	Indonesia	155	14.54%
4	Australia	111	12.07%	France	113	10.64%
5	France	56	6.11%	South Korea	96	9.01%
6	South Korea	46	4.98%	Australia	47	4.42%
7	Belgium	41	4.47%	India	37	3.50%
8	India	34	3.64%	Singapore	32	3.04%
9	Thailand	24	2.61%	Vietnam	31	2.90%
10	The US	14	1.49%	Israel	20	1.86%
11	Israel	6	0.62%	Thailand	14	1.32%
12	New Zealand	5	0.58%	New Zealand	4	0.38%
13	Spain	4	0.44%	Hungary	4	0.33%
14	Malaysia	1	0.09%	The Netherlands	3	0.32%



Note:1. The data were updated to 15 Sept., 2023.  
2. All the data here are calculated by actual volume.  
3. Due to rounding, the total may not equal 100.00%.  
Source:China Customs



## Brief news

### ADAMA launches two chlorantraniliprole products in India

On 5 Sept., ADAMA Ltd. (ADAMA) announced the launch of Cosayr<sup>®</sup> and Lapidos<sup>®</sup>, two insecticide products, in India. This marks the first batch of its chlorantraniliprole-based insecticides hit the market.

Lapidos<sup>®</sup> and Cosayr<sup>®</sup> can be applied on paddy rice and sugar cane to effectively control multiple pests, and thus improve crop yields and quality. Lapidos<sup>®</sup> is a GR formulation with wide application range; it can protect young crops. Cosayr<sup>®</sup> is a foliar solution that controls striped rice stem borers and rice leaf rollers that are responsible for major crop losses every year.

According to ADAMA, chlorantraniliprole is an important active ingredient for its future insecticide portfolio, and an integral part of the company's "Core Leap" strategy.

### FLAGCHEM granted invention patent for flonicamid preparation method

On 31 Aug., Jiangsu Flag Chemical Industry Co., Ltd. (FLAGCHEM) announced that it had acquired the certificate of invention patent for a preparation method for N-(cyanomethyl)-4-(trifluoromethyl)nicotinamide issued by the China National Intellectual Property Administration. The method, with easily accessible materials, high purity of final product and good product quality, is believed as fit for the purpose of mass production. According to FLAGCHEM, application of this method will not have significant influences on its short-term business performance, but in the long run, positive effects are expected as the use would facilitate launch of new products and strengthen the company's core competencies.

The common name of N-(cyanomethyl)-4-(trifluoromethyl)nicotinamide is flonicamid. It is a pyridinecarboxamide insecticide developed by Ishihara Sangyo Kaisha Ltd. The insecticide is mainly applied on cotton, fruits, vegetables, cultivated plants not belong to agricultural crops, etc.

### Xinjiang to accredit fourth-batch chemical concentration zone

On 25 Aug., the Industry and Information Technology Department of Xinjiang Uygur Autonomous Region announced that it planned to accredit the Qitai County Lama Huliang Industrial Park Chemical Concentration Zone as the first chemical industrial park or chemical concentration zone in the fourth batch in Xinjiang. The chemical concentration zone is located in the Qitai County, Hui Autonomous Prefecture of Changji, Xinjiang Uygur Autonomous Region. The applied name of the to-be-accredited chemical concentration zone does not need to go through any change, as the announcement shows.

### CAC Nantong's Baishijia (cyproflanilide 10% DC) to hit market in 2024

In late Aug., CAC Nantong Chemical Co., Ltd. (CAC Nantong) successfully held in Shouguang City of Shandong Province, a seminar on its self-developed insecticide Baishijia—a cyproflanilide 10% DC product, for its strategic customers in the North China Area. The seminar presented effects of Baishijia on cabbage. The product is expected to hit the market in 2024.





The high-efficacy and low-toxicity active ingredient cyproflanilide, with meta-diamide structure, is the first patented compound that CAC Nantong has developed independently. With broad insect-killing spectrum, good penetrating ability, fast-acting feature and persistent effect, cyproflanilide can effectively control lepidopteran pests, coleopteran pests, thysanopteran pests, etc.

### **Ningxia Xinrun Chuantai to build 120kt/a dimethyl sulphate project**

On 13 Sept., the Ecological Environment Bureau of Management Committee of Ningdong Energy Chemical Industry Base announced that it planned to approve the environmental impact report of Ningxia Xinrun Chuantai Materials Co., Ltd. (Ningxia Xinrun Chuantai)'s dimethyl sulphate project. The project will construct lines of 120,000 t/a dimethyl sulphate, 76,400 t/a sulphur trioxide and 30,000 t/a sulphuric acid (by-product). All the dimethyl sulphate produced will be for sale.

Dimethyl sulphate can be used to synthesise organophosphorus insecticides and some fungicides and herbicides. Currently, there is a big supply shortage of the product both at home and abroad. Seeing this, Linyi Yuanbo Chemical Co., Ltd. (Linyi Yuanbo), the parent company of Ningxia Xinrun Chuantai, decided to launch a dimethyl sulphate project in this new establishment, to strengthen its presence in the market. Ningxia Xinrun Chuantai was set up on 20 Dec., 2022. It is a high-tech enterprise engaged in R&D, production and sale of active pharmaceutical ingredients and fine chemicals. Dimethyl sulphate will be the company's main product.

### **EI report of Jiangxi Tianyu's cyproflanilide intermediate project released**

On 15 Sept., the environmental impact (EI) report of Jiangxi Tianyu Chemical Co., Ltd. (Jiangxi Tianyu)'s 200 t/a cyclopropanecarboxaldehyde and other special-purpose intermediates project was published by local government. According to the plan, the project will construct production lines of 200 t/a cyclopropanecarboxaldehyde, 500 t/a 2-chloro-3-nitrobenzoic acid, 400 t/a 2-fluoro-3-nitrobenzoic acid and 800 t/a cyclopropanecarboxamide. The four products are all important intermediates for the novel insecticide cyproflanilide, and thus it is fair to say that Jiangxi Tianyu aims at building up a supporting industrial chain for cyproflanilide.

Jiangxi Tianyu is a wholly-owned subsidiary of CAC Nantong Chemical Co., Ltd. (CAC Nantong), and cyproflanilide is the first patented compound that CAC Nantong has developed independently.

### **Shaanxi Meibang to raise fund to build chlorfenapyr TC & chlorantraniliprole TC capacity**

On 8 Sept., Shaanxi Meibang Pharmaceutical Group Co., Ltd. (Shaanxi Meibang) released a prospectus for the issuance of convertible corporate bonds to unspecified objects. The company proposed to raise a fund not exceeding USD73.83 million (RMB530 million) for a 6,000 t/a pesticides TC production lines construction project, which will build capacity of 2,000 t/a chlorfenapyr TC, 2,000 t/a chlorantraniliprole TC and 2,000 t/a pyraclostrobin TC. The three products planned are all high-efficacy low-toxicity pesticides.

According to Shaanxi Meibang, the project will help the company move upstream from its main business—pesticide formulation business, and extend its reach to the production and sale of pesticides TC. It will enrich the company's product portfolio, boost production scale, and increase its competitiveness and profitability by alleviating impacts posed by fluctuating pesticide TC price.





### **Inner Mongolia Yongtai plans to build 500 t/a chlorantraniliprole TC capacity**

On 11 Sept., the Wuhai Municipal Bureau of Ecology and Environment announced the acceptance of the environmental impact report of Inner Mongolia Yongtai Chemical Co., Ltd. (Inner Mongolia Yongtai)'s 200 t/a m-difluorobenzene and other products project. The company has planned to invest USD2.79 million (RMB20 million) to construct production capacity of 200 t/a m-difluorobenzene, 500 t/a prothioconazole TC and 500 t/a chlorantraniliprole TC. All the products planned are for sale.

Inner Mongolia Yongtai, established in Oct. 2019, is a wholly-owned subsidiary of Zhejiang Yongtai Technology Co., Ltd. The company engages in the production of fine chemicals. It is located in the Low-Carbon Industrial Park of Wuhai High-tech Industrial Development Zone, Wuhai City, Inner Mongolia Autonomous Region.

### **Nantong Changqing plans to build 16,000 t/a pesticide formulation project**

On 21 Sept., acceptance of the environmental impact (EI) report of Jiangsu Changqing Agrochemical (Nantong) Co., Ltd. (Nantong Changqing)'s 16,000 t/a pesticide formulation project was announced by local authorities. The company plans to invest USD27.91 million (RMB200.33 million) to construct production capacity of 9,860 t/a herbicide formulations (in the forms of EC, AS, EW, ME, OD, SC and WP), 5,640 t/a insecticide and fungicide formulations (in the forms of EC, AS, SC, DP and GR), and 500 t/a growth regulator formulations.

Nantong Changqing is a wholly-owned subsidiary of Jiangsu Changqing Agrochemical Co., Ltd. (Jiangsu Changqing). Jiangsu Changqing was established in Jan. 2001. Its products cover herbicide, insecticide and fungicide categories, with 23 TC products and 73 formulation products; all are high-efficacy, low-toxicity, low-residue pesticide varieties. Its main products—fomesafen, imidacloprid and diafenthiuron, once were listed as national new products. With output and sales volume of fomesafen ranking first in China, the company takes up an over 60% market share.

### **Jilin releases second-batch chemical parks to pass review**

On 8 Sept., the Department of Industry and Information Technology of Jilin Province published the second-batch list of chemical industrial parks that to pass accreditation review, and the list of new chemical industrial parks to be accredited.



**TABLE 14:** Second-batch list of chemical industrial parks that to pass accreditation review in Jilin Province, 2023

No.	Name of the park
1	Panshi Metallurgy, Chemical and New Materials Industrial Park
2	Siping New Industrialisation Economic Development Zone Ecological Chemical Industrial Park
3	Jilin Songyuan Petrochemical Industry Circular Economy Zone Green Chemical Industrial Park
4	Jilin West (Daan) Clean Engery Chemical Industrial Park
5	Tumen Chemical and New Materials Circular Economy Industrial Park
6	Jiangyuan Coal-based Chemical Circular Economy Park

Source: Department of Industry and Information Technology of Jilin Province

**TABLE 15:** List of new chemical industrial parks to be accredited in Jilin Province, 2023

No.	Name of the park
1	Baicheng City Chemical Industrial Park
2	Jilin West (Taonan) Green Engery Chemical Industrial Park
3	Tongyu County Chemical Industrial Park
4	Hunchun International Demonstration Zone Chemical Industrial Park

Source: Department of Industry and Information Technology of Jilin Province





## Price update

## Ex-works prices of major insecticides in China, 8 Sept., 2023

TABLE 16: Ex-works prices of major insecticides in China, 8 Sept., 2023

Product	20230808		20230908	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
95% Abamectin technical	388,000	54,430.93	388,000	54,048.03
97% Acephate technical	43,000	6,032.29	43,000	5,989.86
95% Acetamiprid technical	83,000	11,643.73	83,800	11,673.26
95% Azocyclotin technical	220,000	30,862.9	220,000	30,645.79
95% Beta-Cypermethrin technical	128,200	17,984.65	127,000	17,690.98
97% Bifenthrin technical	158,000	22,165.17	158,000	22,009.25
95% Buprofezin technical	70,000	9,820.01	65,000	9,054.44
98% Carbofuran technical	100,000	14,028.59	98,000	13,651.31
98% Chlorfenapyr technical	155,000	21,744.31	170,000	23,680.84
95% Chlorfluazuron technical	400,000	56,114.36	380,000	52,933.64
95% Chlorpyrifos technical	37,900	5,316.84	38,600	5,376.94
94% Cypermethrin technical	58,000	8,136.58	54,000	7,522.15
99% Cyromazine technical	132,000	18,517.74	125,000	17,412.38
98% Deltamethrin technical	390,000	54,711.5	385,000	53,630.13
95% Diafenthiuron technical	112,000	15,712.02	112,000	15,601.49
98% Dimethoate technical	47,600	6,677.61	46,600	6,491.34
70% Emamectin benzoate technical	367,500	51,555.07	367,500	51,192.4
92% Fenvalerate technical	145,000	20,341.46	145,000	20,198.36
95% Fipronil technical	430,000	60,322.94	430,000	59,898.59
98% Hexaflumuron technical	460,000	64,531.52	450,000	62,684.57





97% Imidacloprid technical	90,900	12,751.99	92,000	12,815.51
98% Isoprocarb technical	45,500	6,383.01	45,500	6,338.11
95% Lambda-cyhalothrin technical	121,000	16,974.59	118,000	16,437.29
90% Malathion technical	38,000	5,330.86	38,000	5,293.36
95% Methidathion technical	90,000	12,625.73	90,000	12,536.91
90% Methomyl SP	65,000	9,118.58	65,000	9,054.44
98% Methomyl technical	73,900	10,367.13	73,900	10,294.2
75% Omethoate technical	52,000	7,294.87	52,000	7,243.55
90% Phoxim technical	39,000	5,471.15	39,000	5,432.66
90% Profenofos technical	75,000	10,521.44	74,000	10,308.13
90% Propargite technical	60,000	8,417.15	60,000	8,357.94
95% Pymetrozine technical	115,000	16,132.88	112,500	15,671.14
95% Pyridaben technical	98,000	13,748.02	98,000	13,651.31
97% Spirodiclofen technical	147,000	20,622.03	142,000	19,780.46
85% Triazophos technical	69,000	9,679.73	69,000	9,611.63

Note: Ex-works price includes VAT.

Source: CCM

### Shanghai Port prices of major insecticides in China, 8 Sept., 2023





TABLE 17: Shanghai Port prices of major insecticides in China, 8 Sept, 2023

Product	20230808		20230908	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
95% Abamectin technical	388,500	54,501.07	388,500	54,117.68
97% Acephate technical	43,500	6,102.44	43,500	6,059.51
95% Acetamiprid technical	83,500	11,713.87	84,300	11,742.91
95% Azocyclotin technical	220,500	30,933.04	220,500	30,715.44
95% Beta-Cypermethrin technical	128,700	18,054.8	127,500	17,760.63
97% Bifenthrin technical	158,500	22,235.32	158,500	22,078.9
95% Buprofezin technical	70,500	9,890.16	65,500	9,124.09
98% Carbofuran technical	100,500	14,098.73	98,500	13,720.96
98% Chlorfenapyr technical	155,500	21,814.46	170,500	23,750.49
95% Chlorfluazuron technical	400,500	56,184.5	380,500	53,003.29
95% Chlorpyrifos technical	38,400	5,386.98	39,100	5,446.59
94% Cypermethrin technical	58,500	8,206.73	54,500	7,591.8
99% Cyromazine technical	132,500	18,587.88	125,500	17,482.03
98% Deltamethrin technical	390,500	54,781.64	385,500	53,699.78
95% Diafenthiuron technical	112,500	15,782.16	112,500	15,671.14
98% Dimethoate technical	48,100	6,747.75	47,100	6,560.99
70% Emamectin benzoate technical	368,000	51,625.21	368,000	51,262.05
92% Fenvalerate technical	145,500	20,411.6	145,500	20,268.01
95% Fipronil technical	430,500	60,393.08	430,500	59,968.24
98% Hexaflumuron technical	460,500	64,601.66	450,500	62,754.22
97% Imidacloprid technical	91,400	12,822.13	92,500	12,885.16
98% Isoprocarb technical	46,000	6,453.15	46,000	6,407.76





95% Lambda-cyhalothrin technical	121,500	17,044.74	118,500	16,506.94
90% Malathion technical	38,500	5,401.01	38,500	5,363.01
95% Methidathion technical	90,500	12,695.87	90,500	12,606.56
90% Methomyl SP	65,500	9,188.73	65,500	9,124.09
98% Methomyl technical	74,400	10,437.27	74,400	10,363.85
75% Omethoate technical	52,500	7,365.01	52,500	7,313.2
90% Phoxim technical	39,500	5,541.29	39,500	5,502.31
90% Profenofos technical	75,500	10,591.59	74,500	10,377.78
90% Propargite technical	60,500	8,487.3	60,500	8,427.59
95% Pymetrozine technical	115,500	16,203.02	113,000	15,740.79
95% Pyridaben technical	98,500	13,818.16	98,500	13,720.96
97% Spirodiclofen technical	147,500	20,692.17	142,500	19,850.11
85% Triazophos technical	69,500	9,749.87	69,500	9,681.28

Note: Shanghai port price = ex-works price + transportation fee from warehouse to Shanghai port, and the ex-works price includes VAT  
Source: CCM

### FOB Shanghai prices of major insecticides in China, 8 Sept., 2023





TABLE 18: FOB Shanghai prices of major insecticides in China, 8 Sept., 2023, USD/t

Product	20230808	20230908
95% Abamectin technical	53,039.68	52,666.56
97% Acephate technical	5,774.87	5,734.25
95% Acetamiprid technical	11,418.2	11,447.16
95% Azocyclotin technical	30,195.21	29,982.8
95% Beta-Cypermethrin technical	16,992.76	16,715.29
97% Bifenthrin technical	20,884.25	20,737.33
95% Buprofezin technical	9,686.7	8,931.52
98% Carbofuran technical	13,771.79	13,401.41
98% Chlorfenapyr technical	21,253.05	23,145.82
95% Chlorfluazuron technical	54,705.11	51,604.27
95% Chlorpyrifos technical	5,290.41	5,350.22
94% Cypermethrin technical	7,738.37	7,154.01
99% Cyromazine technical	17,497.26	16,452.82
98% Deltamethrin technical	51,431.72	50,415.17
95% Diafenthiuron technical	14,862.08	14,757.53
98% Dimethoate technical	6,412.65	6,233.77
70% Emamectin benzoate technical	50,243.07	49,889.63
92% Fenvalerate technical	19,241.08	19,105.73
95% Fipronil technical	58,778.3	58,364.82
98% Hexaflumuron technical	62,892.23	61,092.2
97% Imidacloprid technical	12,501.14	12,563.42
98% Isoprocarb technical	6,136.3	6,093.14
95% Lambda-cyhalothrin technical	16,020.33	15,513.23





90% Malathion technical	5,149.34	5,113.11
95% Methidathion technical	12,426.94	12,339.52
90% Methomyl SP	8,998.23	8,934.93
98% Methomyl technical	11,126.52	11,048.25
75% Omethoate technical	6,993.41	6,944.22
90% Phoxim technical	5,415.07	5,376.98
90% Profenofos technical	10,002.44	9,799.65
90% Propargite technical	8,334.19	8,275.56
95% Pymetrozine technical	15,265.04	14,828.14
95% Pyridaben technical	13,508.42	13,413.4
97% Spirodiclofen technical	19,481.18	18,686.17
85% Triazophos technical	9,587.22	9,519.78

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

*Source: CCM*



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

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

Fax:+86-20-37616768

E-mail:econtact@cnchemicals.com

Website:www.cnchemicals.com