

# Insecticides China Monthly Report 202308

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## Headline

In early Aug., insecticide TC market remained weak in general. Prices of some pyrethroids TC went down. However, the prices of chlorpyrifos TC and methomyl TC increased quickly, and it is expected to see stable increases in the prices of the two products for a while.

In late Aug., insecticides TC had stable price in general. On a monthly basis, the prices of chlorpyrifos TC and methomyl TC increased fast, the prices of nicotinoids went up slightly, and the prices of pyrethroids had mixed trends.

On 3 Aug., the EI report of Gansu Jinse Runsheng's 15,200 t/a pesticide TC and intermediate project was published. The company has planned to invest RMB150 million to build the project in three phases.

Liaoning Longtian has completed the construction of 1,000 t/a chlorantraniliprole TC production lines by early Aug. And previously, the company finished the construction of 1,000 t/a mesotrione TC production lines.

On 31 July, acceptance of the EI report of Shandong United Pesticide's 10,000 t/a CCMP and 5,000 t/a acetamiprid TC project was announced by local government. Previously in late 2019, the company's EI report of the same project was approved, yet the construction was postponed.

In Aug., some basic environmental impact assessment (EIA) information of Qingdao Hengning's green high-efficacy pesticide TC and intermediate project was published.

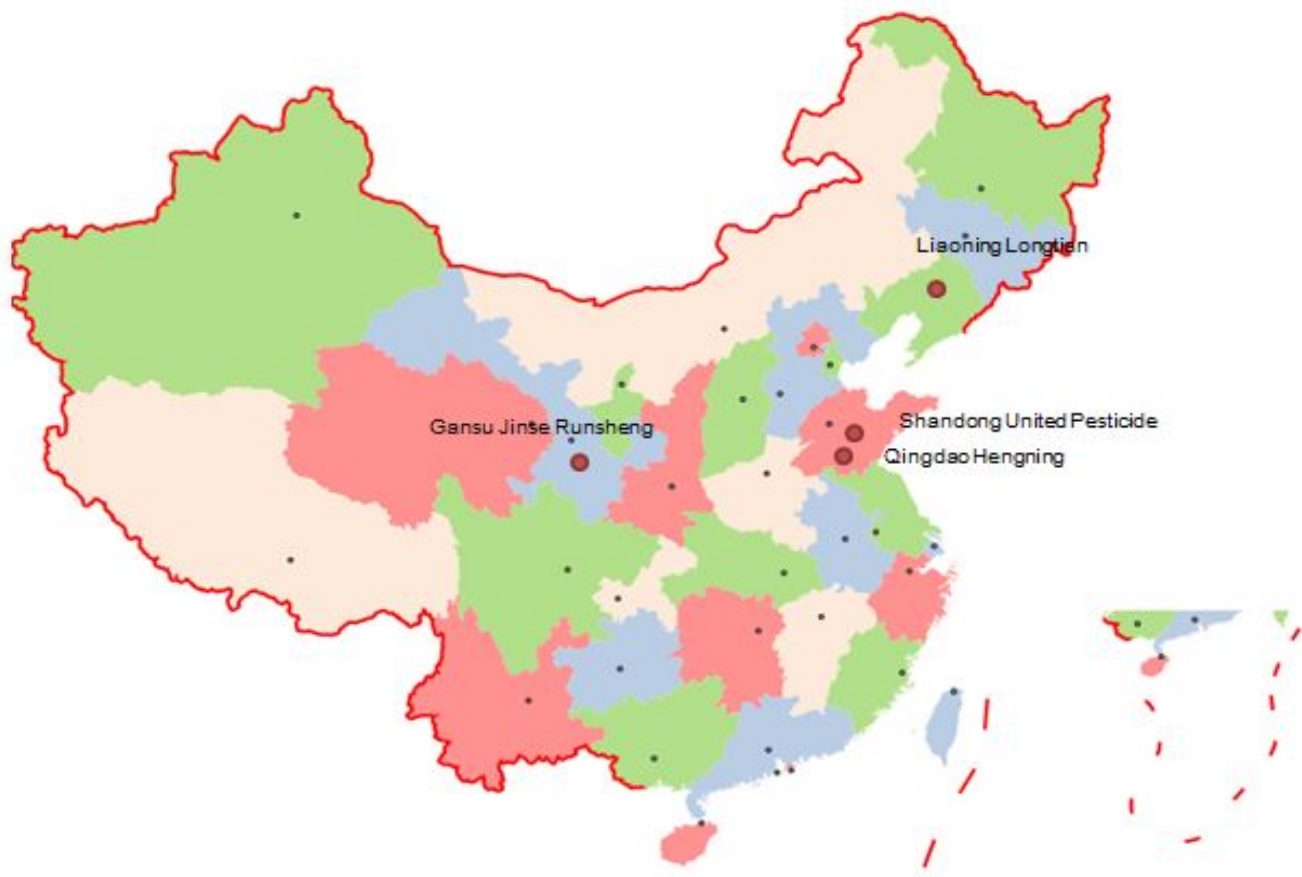
In early Aug., it was warned that there would be an overall relatively heavy occurrence of major pests & diseases on autumn grain crops in Anhui Province, which will pose great threat to crop cultivation. Besides, days before, Anhui provincial command of prevention and control of major pests & diseases on crops issued a notice, which requires local governments in the province to do a good job on prevention and control of major pests & diseases, strengthen accurate early warning services, and promote unified prevention and control.

On 15 Aug., 2023, the Department of Agrochemical Management of MARA released a batch of pesticide products approved of registration renewal, which include 649 insecticide products, of which 59 are TC products. The majority of these insecticide products are of low or moderate toxicity, and over half of these insecticide products are in the form of EC.

On 31 July, NATESC issued the Notice on Reinforcing Monitoring and Early Warning of Major Pests and Diseases after the Typhoon Doksuri. With intensified efforts put into pest & disease monitoring and early warning, the data collected could provide a reliable basis for scientific control measures with greater precision.

In May–June 2023, China's insecticide formulations were mainly exported to Myanmar, Brazil, Nigeria, Thailand, etc., and the export volume grew by some 13% YoY. Meanwhile, import volume of insecticide formulations to China also increased. China mainly imported these products from Japan, France, Indonesia, Singapore, etc. in this period, and the import from Japan made up almost 40% of the total.







### Editor's note

In Aug., insecticide price was basically stable in China, except price hikes in chlorpyrifos TC and methomyl TC. Moreover, on a monthly basis, small upward movements in the prices of some nicotinoids and pyrethroids were mainly propelled by rising raw material price. Despite price increases, the overall market demand was still weak. Since the majority of insecticide producers have resumed production, yet recovery in demand has been seldom seen, it is believed that the prices of most insecticides TC will keep stable, and there are small chances that upward trend in the prices of some products will continue.

Many pesticide enterprises have recognised the irresistible trend in the industry—the development of high-efficacy low-toxicity pesticides, and they have actively launched such projects. This trend is set against the backdrop that ever increasing requirements and restrictions have been enforced on industrial projects in China, as well as the fact that ever growing attentions have been paid to food safety and environmental protection. This month, Gansu Jinse Runsheng published the EI report of its 15,200 t/a pesticide TC and intermediate project, Shandong United Pesticide saw the EI report of its 10,000 t/a CCMP and 5,000 t/a acetamiprid TC project accepted by local government, Qingdao Hengning revealed a green high-efficacy pesticide TC and intermediate project. Besides, Liaoning Longtian has completed the construction of 1,000 t/a chlorantraniliprole TC production lines.

As to latest policy, Anhui provincial command of prevention and control of major pests & diseases on crops issued a notice, which requires local governments in the province to do a good job on prevention and control of major pests & diseases, strengthen accurate early warning services, and promote unified prevention and control. Statistics collected from various plant inspection and protection stations in Anhui Province showed that there was heavier-than-average occurrence of major pests & diseases on autumn grain crops in the province, and an overall relatively heavy occurrence was expected.

*The USD/CNY exchange rate in this newsletter is USD1.00 = CNY7.1283 on 1 Aug., 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

### Weak insecticide TC market continues in early Aug.

Summary: In early Aug., insecticide TC market remained weak in general. Prices of some pyrethroids TC went down. However, the prices of chlorpyrifos TC and methomyl TC increased quickly, and it is expected to see stable increases in the prices of the two products for a while.

In early Aug., a general sluggish demand still prevailed in insecticide TC market. Pyrethroid insecticides saw mixed price trends; some TC products experienced price dips, while some others had slight increases. Nicotinoid insecticides TC also enjoyed small price recovery. Meanwhile, the prices of chlorpyrifos TC and methomyl TC went up quickly.

**Organophosphorus insecticides:** Ex-works prices of phoxim TC, malathion TC and profenofos TC were stable. The price of chlorpyrifos TC jumped by 8.29% MoM due to increasing market demand and insufficient inventories. Besides, the price of the raw material trichloroacetyl chloride remained high and the supply was relatively tight. The majority of chlorpyrifos manufacturers operated normally, but some refused to accept new orders or only accepted small orders. There is still room for price raise for chlorpyrifos TC. However, in general, it is believed that prices of some organophosphorus insecticides TC would remain stable, as market demand for such insecticides is limited.

**Carbamate insecticides:** Ex-works prices of carbofuran TC and isoprocarb TC were stable, while the price of methomyl TC hiked by 10.30% MoM. Yet there has been little improvement in carbamate insecticide TC market, the price of methomyl TC is expected to stay at current level temporarily.

**Pyrethroid insecticides:** Ex-works prices of TC bifenthrin TC and cypermethrin TC went down by 1.25% and 6.45% MoM, respectively, mainly due to weak domestic demand. Yet the price of lambda-cyhalothrin TC went up by 2.54% MoM, supported by recovering downstream market. Considering a glut of bifenthrin TC and cypermethrin TC in the market, their prices may keep falling in the short term.

**Nicotinoid insecticides:** Ex-works prices of imidacloprid TC and acetamiprid TC edged up by 1.00% and 1.22% MoM, respectively, as the supplies became a little tight after production suspension in some producers.



**TABLE 1: Ex-works prices of major insecticide TC products in China in early Aug. 2023**

Category	Product	Ex-works price (RMB/t)	Ex-works price (USD/t)	RMB MoM change
Organophosphorus insecticide	90% Phoxim technical	39,000	5,471.15	0.00%
	95% Chlorpyrifos technical	37,900	5,316.84	8.29%
	90% Malathion technical	38,000	5,330.86	0.00%
	90% Profenofos technical	75,000	10,521.44	0.00%
Carbamate insecticide	98% Carbofuran technical	100,000	14,028.59	0.00%
	98% Methomyl technical	73,900	10,367.13	10.30%
	98% Isoprocarb technical	45,500	6,383.01	0.00%
Pyrethroid insecticide	97% Bifenthrin technical	158,000	22,165.17	-1.25%
	95% Lambda-cyhalothrin technical	121,000	16,974.59	2.54%
	94% Cypermethrin technical	58,000	8,136.58	-6.45%
	98% Deltamethrin technical	390,000	54,711.50	0.00%
Nicotinoid insecticide	97% Imidacloprid technical	90,900	12,751.99	1.00%
	95% Acetamiprid technical	83,000	11,643.73	1.22%

Source:CCM

### Late-Aug. prices of chlorpyrifos TC and methomyl TC up over 10% MoM

Summary: In late Aug., insecticides TC had stable price in general. On a monthly basis, the prices of chlorpyrifos TC and methomyl TC increased fast, the prices of nicotinoids went up slightly, and the prices of pyrethroids had mixed trends.

Compared with early-Aug. situation, the price of insecticides TC basically stabilised in late Aug., as downstream purchase did not improve much. Within the month, chlorpyrifos TC price increased slightly, while deltamethrin TC price dipped a little. On a monthly basis, apart from price jumps in chlorpyrifos TC and methomyl TC, the prices of nicotinoids went up slightly due to price raises in raw materials CCMP and 2-nitroaminoimidazoline, while the prices of pyrethroids had mixed trends.

**Organophosphorus insecticides:** In late Aug., ex-works prices of phoxim TC, malathion TC and profenofos TC were stable. The price of chlorpyrifos TC jumped by 11.43% MoM because of tight supply in the market. By late Aug., suspension had continued in some chlorpyrifos producers, such as Inner Mongolia Miraculous Crop Science Co., Ltd. and Chongqing Huage Biochemical Co., Ltd. Some, like Shandong Luba Chemical Co., Ltd. and Jiangsu Fengshan Group Co., Ltd., have stopped accepting new orders and been busy with



fulfilling the existing orders. Hubei Benxing Agrochemical Co., Ltd. and Zhejiang Xinnong Chemical Co., Ltd. have operated normally, yet only accepted small orders, mainly for export though. However, given that market inventories would go up after production gradually resumes, and market demand has started to show signs of falling back, it is expected the price of chlorpyrifos TC will see downward movements with small fluctuations. The prices of other organophosphorus insecticides are projected to remain stable.

**Carbamate insecticides:** Ex-works prices of carbofuran TC and isoprocarb TC were stable. The price of methomyl TC hiked by 10.30% MoM due to increased price of raw material ethanol. Yet the price of methomyl TC is expected to stay at current level since market demand is weak at present.

**Pyrethroid insecticides:** In late Aug., ex-works prices of TC bifenthrin TC, cypermethrin TC and deltamethrin TC went down by 1.25%, 3.33% and 1.28% MoM, respectively, while the price of lambda-cyhalothrin TC went up by 2.54% MoM. Considering gradually resumed production of pyrethroid insecticides and weak demand, an overall stable price is expected. Currently, Jiangsu Chunjiang Runtian Agrochemical Co., Ltd. and Jiangsu Yangnong Chemical Co., Ltd. have resumed operation of their bifenthrin and lambda-cyhalothrin lines, and Shandong Gaoxin Runnong Chemical Co., Ltd. has resumed operation of its lambda-cyhalothrin lines. Guangdong Liwei Chemical Industry Co., Ltd. has kept active operation of its bifenthrin and lambda-cyhalothrin lines.

**Nicotinoid insecticides:** Ex-works prices of imidacloprid TC and acetamiprid TC edged up by 1.68% and 2.22% MoM, respectively, as the prices of raw materials CCMP and 2-nitroaminoimidazoline went slightly up. In late Aug., production of the two products was quite stable; there was more supply of 2-nitroaminoimidazoline in the market as producers came back to active operation, at low level though, yet in general the supply was relatively tight. It is estimated that there will be small rises in the price of nicotinoid insecticides in the short term, supported by up-going raw material price.







TABLE 2: Ex-works prices of major insecticide TC products in China in late Aug. 2023

Category	Product	Ex-works price (RMB/t)	Ex-works price (USD/t)	RMB MoM change
Organophosphorus insecticide	90% Phoxim technical	39,000	5,471.15	0.00%
	95% Chlorpyrifos technical	39,000	5,471.15	11.43%
	90% Malathion technical	38,000	5,330.86	0.00%
	90% Profenofos technical	75,000	10,521.44	0.00%
Carbamate insecticide	98% Carbofuran technical	100,000	14,028.59	0.00%
	98% Methomyl technical	73,900	10,367.13	10.30%
	98% Isoprocarb technical	45,500	6,383.01	0.00%
Pyrethroid insecticide	97% Bifenthrin technical	158,000	22,165.17	-1.25%
	95% Lambda-cyhalothrin technical	121,000	16,974.59	2.54%
	94% Cypermethrin technical	58,000	8,136.58	-3.33%
	98% Deltamethrin technical	385,000	54,010.07	-1.28%
Nicotinoid insecticide	97% Imidacloprid technical	90,900	12,751.99	1.68%
	95% Acetamiprid technical	83,000	11,643.73	2.22%

Source:CCM





## Company and supply

### Gansu Jinse Runsheng plans to build 15,200 t/a pesticide TC and intermediate project

Summary: On 3 Aug., the EI report of Gansu Jinse Runsheng's 15,200 t/a pesticide TC and intermediate project was published. The company has planned to invest RMB150 million to build the project in three phases.

On 3 Aug., the environmental impact (EI) report of Gansu Jinse Runsheng Chemical Co., Ltd. (Gansu Jinse Runsheng)'s 15,200 t/a pesticide TC and intermediate project was published. This project is the company's new step after its previous fine chemical intermediate project. This 15,200 t/a project has acquired recordation certificate issued by the Development and Reform Bureau of Yumen City. The products planned and production technologies to be adopted are in line with national and regional policies.

**TABLE 3:** Products planned in Gansu Jinse Runsheng's pesticide TC and intermediate project

Project phase	Product	Capacity, t/a
Phase I	Fenpropathrin TC	1,000
	2,2,3,3-Tetramethylcyclopropanecarboxylic acid	500
	Fenvalerate TC	500
	Cypermethrin TC	1,000
	Cyhalothrin TC	500
	Lambda-cyhalothric acid	500
Phase II	Tetramethylfluthrin TC	500
	Chlorempenthrin TC	500
	Dimefluthrin	100
	Meperfluthrin	100
Phase III	O,O-Diethyl chlorothiophosphate	10,000

*Source:EI report of the 15,200 t/a pesticide TC and intermediate project*

According to the plan, Gansu Jinse Runsheng will invest a total of USD21.04 million (RMB150 million) in this whole project, of which USD1.43 million (RMB10.20 million) is for environmental protection. For the phase I program, it will build a new workshop to accommodate the lines, a dry room and a preparation workshop; for the phase III program, it will build a sulphuration workshop, a chlorination workshop, a sulphur treatment workshop and a tail gas absorption workshop. The O,O-diethyl chlorothiophosphate production lines will generate by-products including hydrochloric acid (30%), sulphur and sodium hydrosulphide.





The majority of the planned products are insecticides. 2,2,3,3-Tetramethylcyclopropanecarboxylic acid and lambda-cyhalothric acid are intermediates, and O,O-diethyl chlorothiophosphate is a material for the synthesis of organophosphates such as phoxim, parathion, chlorpyrifos, triazophos and diazinon. The project could enrich Gansu Jinse Runsheng's insecticide portfolio and thus better satisfy market demands.

Gansu Jinse Runsheng, a subsidiary of Hangzhou Jinrunsheng Industrial (Group) Co., Ltd., was established in April 2019. Its registered business scope covers manufacture of basic chemicals and sale of chemical products. This 15,200 t/a project shows that the company now follows a general idea that advocates the modernisation of traditional industries and scaling up emerging industries, and pays attention to upgrading, transformation, integration and low-carbon thought. Its informatisation and modernisation processes have been accelerating, and its innovation capability has been constantly strengthened, which helps speed up the company's transformation and upgrading. Through more reasonable allocation of various factors of production, and making innovation and technology as key drivers for growth, the company has been boosting its core competence. Currently, Gansu Jinse Runsheng has focused its efforts on expanding its presence in the industrial chain, and on increasing its participation in strengthening the industrial cluster.

The company's production plant is located in the Yumendong Building Materials Chemical Industrial Park, Yumen City, Jiuquan City, Gansu Province. The park, based upon backbone basic chemical enterprises such as Gansu Jinlitong Carbon Material Technology Co., Ltd. and Jiuquan Haohai Coal Chemical Co., Ltd. there, is actively promoting moving downstream and shaping the park into a layout pattern that the west side is for fine chemicals, central part for coal chemical and coal-based basic chemicals, and the east side for chemical new materials. Gansu Jinse Runsheng's new project, which is to be settled in the park, is consistent with the master plan for the park.

### **Liaoning Longtian builds up 1,000 t/a chlorantraniliprole TC lines**

Summary: Liaoning Longtian has completed the construction of 1,000 t/a chlorantraniliprole TC production lines by early Aug. And previously, the company finished the construction of 1,000 t/a mesotrione TC production lines.

In Aug., CCM learned from Liaoning Longtian Chemical Technology Co., Ltd. (Liaoning Longtian) that it had already completed the construction as well as the acceptance check of 1,000 t/a chlorantraniliprole TC production lines and supporting facilities in its existing plant in the Liaoning Fuxin Fluorine Industrial Development Zone, Fuxin City, Liaoning Province. The lines are parts of Liaoning Longtian's 5,600 t/a pesticide TC and intermediate project.

Liaoning Longtian is a fine chemical enterprise, and pesticide business is one of the company's main businesses. Since the settlement in the Liaoning Fuxin Fluorine Industrial Development Zone, it has launched construction projects including 12,700 t/a fine chemicals (referred to as Phase I) and 5,600 t/a pesticides TC and intermediates (referred to as Phase II). It is worth noting that the Liaoning Fuxin Fluorine Industrial Development Zone has also attracted enterprises like Liaoning Shenglian Biotechnology Co., Ltd. and Liaoning Zhonghui Biotechnology Co., Ltd. to establish large-scale pesticide production plants here.





According to Liaoning Longtian's plans, the Phase I project involves the construction of lines of 3,000 t/a 2-nitro-4-methylsulfonylbenzoic acid, 400 t/a 2-chloro-4-(methylsulfonyl)benzoic acid, 4,000 t/a 1-methyl-4-methylsulfonylbenzene, 3,000 t/a 2-chloro-5-(chloromethyl)pyridine (CCMP), 300 t/a (E)-methyl 2-(methoxyimino)-2-(o-tolyl)acetate, 1,000 t/a 2-coumaranone and 1,000 t/a p-fluoroacetophenone, along with supporting facilities; the Phase II project involves the construction of lines of 1,000 t/a mesotrione TC, 1,000 t/a chlorantraniliprole TC, 600 t/a methoxyamine hydrochloride and 3,000 t/a tosyl chloride, along with supporting facilities.

In fact, both the Phase I and Phase II projects have been constructed in phases. Apart from the 1,000 t/a chlorantraniliprole TC lines, the company has so far built up and put into operation the lines of 3,000 t/a 2-nitro-4-methylsulfonylbenzoic acid, 400 t/a 2-chloro-4-(methylsulfonyl)benzoic acid and 4,000 t/a 1-methyl-4-methylsulfonylbenzene from the Phase I, and 1,000 t/a mesotrione TC lines from the Phase II.

Chlorantraniliprole is a broad-spectrum anthranilic diamide insecticide, with traits like good activity, low toxicity and environment friendliness. It has attracted great attention from the pesticide industry ever since its debut in 2008. The biggest barrier for Chinese pesticide producers to entering the chlorantraniliprole market disappeared, as the two patents for chlorantraniliprole compound expired in China.

Yet it should be noted that patents for chlorantraniliprole production process, key intermediates, etc. are still under protection in China. E. I. du Pont de Nemours and Company, Inc. (DuPont), the developer of chlorantraniliprole, has applied for a series of chlorantraniliprole-related patents in major pesticide markets around the world, covering all aspects, from the core compound to production process and key intermediates, from formulation to application. These patents are now held by FMC Corporation, which acquired crop protection business from DuPont in 2017. Without authorisation from FMC Corporation, Chinese pesticide producers that use its patented intermediates and production process to produce chlorantraniliprole TC will infringe FMC Corporation's rights.

According to Liaoning Longtian, the production process it adopts for the production of chlorantraniliprole TC is not an infringement of FMC Corporation's patent.

It is a common practice in China's pesticide industry that enterprises rush to build production capacity for good pesticide products that went off-patent or will soon go off-patent. Indeed, before the compound patents of chlorantraniliprole expired in China, many Chinese pesticide producers, Liaoning Longtian included, had announced project plans to fight for a head start in grabbing a slice of the promising chlorantraniliprole market. Statistics from the China Crop Protection Industry Association (CCPIA) show that the total designed production capacity of applied chlorantraniliprole TC projects in China is close to 90,000 t/a, and the 100,000 t/a threshold is to be crossed soon.

So far, besides Liaoning Longtian, some other domestic companies have already boasted active chlorantraniliprole TC lines; Shandong Youdao Chemical Co., Ltd. is a representative. And many more are actively pushing ahead with their construction of such lines. Seeing increasing competition in the near future, FMC Corporation is also planning to expand chlorantraniliprole TC production capacity in its Chinese subsidiaries.





In the future, with the planned chlorantraniliprole TC lines coming into operation, the supply of chlorantraniliprole TC in the Chinese market will certainly increase quickly. Production in domestic companies and continued capacity expansion in China will render chlorantraniliprole TC products ever more cost-effective, which carries the hope of changing the landscape in China's insecticide market, and even the overall pesticide market.

### **Shandong United Pesticide restarts CCMP & acetamiprid TC project**

**Summary:** On 31 July, acceptance of the EI report of Shandong United Pesticide's 10,000 t/a CCMP and 5,000 t/a acetamiprid TC project was announced by local government. Previously in late 2019, the company's EI report of the same project was approved, yet the construction was postponed.

On 31 July, acceptance of the environmental impact (EI) report of Shandong United Pesticide Industry Co., Ltd. (Shandong United Pesticide)'s 10,000 t/a 2-chloro-5-(chloromethyl)pyridine (CCMP) and 5,000 t/a acetamiprid TC project was announced by Tai'an Municipal Ecology and Environment Bureau. EI report of the company's CCMP and acetamiprid TC project was once approved by local government in Dec., 2019, yet due to changes made to production process, production equipment, environmental protection facilities and raw materials, Shandong United Pesticide remade the EI report and resubmitted to local authorities. With a planned investment of USD56.28 million (RMB401.18 million), of which USD9.33 million (RMB66.50 million) is for environmental protection, the company will construct production lines of 10,000 t/a CCMP, 5,000 t/a acetamiprid TC and 3,000 t/a ethyl N-cyanoethanimideate in its plant in the Fanzhen Town, Tai'an City, Shandong Province. The construction will take about 12 months.

The planned product acetamiprid TC is a nicotinoid insecticide of moderate toxicity. Acetamiprid is a broad-spectrum, high-efficacy novel insecticide; it is regarded as a safe pesticide. It used to control pests like aphids, planthoppers, thrips and lepidopteran pests on paddy rice, vegetables, fruit trees and tee trees. CCMP is an importance intermediate for multiple nicotinoid insecticides.

Nicotinoid insecticides, usually of high efficacy and low toxicity, have wide applications. Their markets have the capacity for expansion, as the use of high-toxicity pesticides has gradually stopped in many countries in recent years, along with growing attentions to food safety and environmental protection. Correspondingly, many pesticide enterprises have started to adjust their pesticide product mix and add production capacity for intermediates for high-efficacy low-toxicity pesticides.

Shandong United Pesticide, its predecessor being Tai'an United Biochemistry Technology Co., Ltd., is subordinate to China National Agricultural Means of Production Group Co., Ltd. It is a national designated enterprise for the production of pesticide TC and formulation products. Its business scope covers production and processing of insecticides, fungicides and herbicides, sale of self-produced pesticides, hydrochloric acid production, etc. Its main products are imidacloprid TC, pyridaben TC and a variety of pesticide formulations.

Currently, Shandong United Pesticide has production capacity of 1 t/a emamectin benzoate (suspended due to unsatisfactory market), 2,000 t/a imidacloprid, 2,000 t/a acetamiprid TC, 1,200 t/a pymetrozine, 1,000 t/a pyridaben, 800 t/a neonicotinoid insecticides TC, and 10,000 t/a processing capacity for pesticide formulations. It also has some pesticide TC projects under construction; of these still ongoing





projects, the 10,000 t/a liquid form pesticide formulation project and the CCMP technological transformation project await acceptance check, with the production lines already built up, and the 3,300 t/a insecticide TC project achieve some results—the 1,200 t/a pymetrozine line has passed company-organised acceptance check, the 800 t/a chlorfenapyr line has been built up and waits for acceptance check, while the 1,300 t/a bifenthrin line is still under construction.

### **Qingdao Hengning to build 4,000 t/a 2,3-dichloropyridine capacity**

Summary: In Aug., some basic environmental impact assessment (EIA) information of Qingdao Hengning's green high-efficacy pesticide TC and intermediate project was published.

In Aug., some basic environmental impact assessment (EIA) information of Qingdao Hengning Biotechnology Co., Ltd. (Qingdao Hengning)'s green high-efficacy pesticide TC and intermediate project was published. The company has planned to invest USD96 million (RMB684.36 million) to build in its plant, which is located in the No.12 Haipu North Road, Xinhe Ecological and Chemical Industry Base, Qingdao City, Shandong Province, production lines including 20,000 t/a triphosgene, 3,000 t/a trifloxystrobin, 4,000 t/a 2,3-dichloropyridine, 3,000 t/a 2-methyl-3-nitrobenzoic acid, 2,500 t/a methyl 2-(methoxyimino)-2-o-tolylacetate, 2,000 t/a 3'-(trifluoromethyl)acetophenone, 7,500 t/a 2,6-dichloropyridine and 7,200 t/a 2,3,6-trichloropyridine.

Data from the Institute for the Control of Agrochemicals, Ministry of Agriculture and Rural Affairs (ICAMA) show that as of late Aug., 2023, Qingdao Hengning had obtained pesticide registration certificates for eight products—all TC products, a 95% difenoconazole TC, a 98% chlorfenapyr TC, a 97% diafenthiuron TC, a 95% propiconazole TC, a 98% imidacloprid TC, a 99% acetamiprid TC, a 95% cyazofamid TC and a 96% chlorantraniliprole TC. Most of these products are insecticides, and three are fungicides; indeed, Qingdao Hengning focuses on insecticide and fungicide businesses. The company, established in July 2019, now with registered capital of RMB117 million, is a wholly-owned subsidiary of Hailir Pesticides and Chemicals Group Co., Ltd. (Hailir Group).

The new project plans 4,000 t/a new capacity for 2,3-dichloropyridine, a key intermediate for the synthesis of chlorantraniliprole. Along with the promotion of chlorantraniliprole, there has been significant growth in the demand for this intermediate. According to China Crop Protection Industry Association (CCPIA), the combined design capacity of chlorantraniliprole TC projects applied in China in the past few years is close to 90,000 t/a, and the 100,000 t/a threshold is soon to cross.

China's pesticide industry witnesses that production capacity has been concentrated in leading enterprises at an accelerating pace, and those small, scattered ones are no longer in existence. It is ever more evident that in the competition the strong will always be strong. To maintain an edge in the competition, enterprises have to scale up the production, as well as consolidate its control over the supply chain. In recent years, Hailir Group has expanded its business layout to upstream sector. It not only set up the production base Qingdao Hengning, but also sought stable partnership through acquiring equity of other companies. For instance, in June 2022, Hailir Group acquired 26% equity of Shaanxi Jinxinyi Chemical Technology Co., Ltd., an important intermediate producer; the deal cost Hailir Group nearly USD9.10 million (RMB64.84 million). Currently, Hailir Group's business covers intermediates, and pesticide TC and formulation products. That is one of its core advantages.





Qingdao Hengning raised funds for its agrochemical project in 2019. With an investment of USD280.57 million (RMB2,000 million), construction of the Hengning Phase I Program, 40,000 t/a agrochemical TC and intermediate project, started in the Xinhe Ecological and Chemical Industry Base in late 2020. The project was completed in Jan. 2023. Pesticides planned in the Phase I include difenoconazole, propiconazole, diafenthiuron and chlorfenapyr.

The company obtained recordation certificate for the Hengning Phase II Program 80,000 t/a agrochemical TC and pharmaceutical intermediate project in Feb. 2021. However, in April 2023, some changes were made to the original Phase II plan—increase planned capacity for products like pymetrozine, chlorantraniliprole, prothioconazole and trifloxystrobin; add production capacity for products like tolfenpyrad, fluchlordiniliprole, 2,3-dichloropyridine and 4-(4-methylphenoxy)benzylamine. According to Qingdao Hengning, its development goal is set at leading the industry for the next decade, and it will lay solid foundation for the sustainable development of Hailir Group's pesticide TC and pharmaceutical intermediate businesses. It is worth noting that all the products planned in this green high-efficacy pesticide TC and intermediate project are covered in the revised Phase II plan.





## Policy

### Anhui intensifies control of major pests & diseases on autumn grain crops

Summary: In early Aug., it was warned that there would be an overall relatively heavy occurrence of major pests & diseases on autumn grain crops in Anhui Province, which will pose great threat to crop cultivation. Besides, days before, Anhui provincial command of prevention and control of major pests & diseases on crops issued a notice, which requires local governments in the province to do a good job on prevention and control of major pests & diseases, strengthen accurate early warning services, and promote unified prevention and control.

In early Aug., statistics collected from various plant inspection and protection stations in Anhui Province showed that there was heavier-than-average occurrence of major pests & diseases on autumn grain crops in the province, and an overall relatively heavy occurrence was expected. Reasons for this occurrence trend include: quite big base of local pests, multiple immigration peaks of migratory pests, high risks of endemic diseases, typhoon and rounds of rainfall. Therefore, the cultivation of autumn grain crops in the province will be greatly threatened. Besides, Anhui provincial command of prevention and control of major pests & diseases on crops issued a notice, which requires local governments in the province to do a good job on prevention and control of major pests & diseases, strengthen accurate early warning services, and promote unified prevention and control.

According to the notice, county-level and town-level pest & disease monitoring sites, as well as smart IoT (Internet of Things) monitoring sites should be made full use of, and dynamic monitoring be conducted. Large farms and specialised teams are encouraged to join the pest & disease monitoring and surveying, and data analysis and information sharing are made via big data platform, so that accurate situation of pest & disease occurrences could be known in a timely manner and decisions could be made in a scientific manner. Monitoring work should be coupled with prevention and control measures. Comprehensive evaluation should be intensified on field investigations and on control results of pesticide spraying devices. Timely release of pest & disease forecasts and early warnings should be ensured. Moreover, the Anhui Provincial Department of Agriculture and Rural Affairs will soon organise eight working groups to supervise as well as guide prevention and control of major pests & diseases on autumn grain crops in various regions in the province. At local levels, agrotechnicians should play their roles and improve technical guidance on prevention and control in key areas and of pests & diseases on major crops, make sure the application of key techniques like "one spraying for multiple functions" (which means spraying a mixture of fertilisers, pesticides, etc. and achieving multiple effects such as promoting growth, promoting recovery from damages, promoting grain filling and seed filling, and promoting yield.) in fields, and make sure a to-the-detail implementation of the control measures.

The notice also calls for promoting the application of green control technologies such as biological control, physical and chemical lure and control, and high-efficacy low-risk pesticides, and treating pests & diseases at early stage when damages and threats are still small. In terms of unified prevention and control, funds should be spent in a reasonable manner, more supports given to model professional service teams, and social forces mobilised to join specialised unified prevention and control and commissioned control services. Meanwhile, it is encouraged to attract private capital and social capital into agricultural trusteeship service sector, which could then help promote the development of unified prevention and control and commissioned control services. At the front of control of major crop pests & diseases,







the notice suggests that the development of unified prevention and control and green control should be promoted simultaneously, and the level of organisation and technology use be increased in the unified prevention and control work. Moreover, the setting up of green control demonstration zones should continue, and efforts should be put into establishing national-level modern agriculture demonstration zones and pest & disease green control demonstration counties. The initiatives to have zero growth in the total use of pesticides and chemical fertilisers should be advanced, and substitution of biopesticides for chemical ones and of high-efficacy low-toxicity low-residue pesticides for high-toxicity high-residue ones be pushed forward. Continued reduction of chemical pesticide use will facilitate green, high-yield and high-quality development of the agriculture industry.





## Registration

### 59 Insecticide TC products approved of registration renewal in Aug.

Summary: On 15 Aug., 2023, the Department of Agrochemical Management of MARA released a batch of pesticide products approved of registration renewal, which include 649 insecticide products, of which 59 are TC products. The majority of these insecticide products are of low or moderate toxicity, and over half of these insecticide products are in the form of EC.

On 15 Aug., 2023, the Department of Agrochemical Management of the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA) released a batch of pesticide products approved of registration renewal, which include 649 insecticide products. The majority of these insecticides are of low or moderate toxicity. Popular forms are EC, WP and TC, and major active ingredients in these products include phoxim, abamectin, chlorpyrifos, lambda-cyhalothrin, fenvalerate, acetamiprid, imidacloprid and bifenthrin. Altogether 21 companies have at least six insecticide products approved of registration renewal.

Of the 59 insecticide TC products approved of registration renewal, the most popular product type is 97% chlorpyrifos TC, with six products in total. These six chlorpyrifos TC products are registered by ADAMA Makhteshim Ltd., Anhui Huaxing Chemical Industry Co., Ltd., Shandong Luba Chemical Co., Ltd., Shandong Tiancheng Biotechnology Co., Ltd., Zhejiang Wynca Chemical Industrial Group Co., Ltd. and Jiangsu Changqing Agrochemical Co., Ltd., respectively.

**TABLE 4:** Insecticide products approved of registration renewal by toxicity released on 15 Aug., 2023

No.	Toxicity	Number
1	Low	276
2	Moderate	268
3	Low (TC: highly toxic)	62
4	High	19
5	Moderate (TC: highly toxic)	17
6	Mild	7
<b>Total</b>		<b>649</b>

Source: Department of Agrochemical Management of MARA



**TABLE 5:** Insecticide products approved of registration renewal by form released on 15 Aug., 2023

No.	Form	Number
1	EC	374
2	WP	60
3	TC	59
4	SC	37
5	GR	23
6	SP	21
7	ME	18
8	WG	15
9	SL	11
10	EW	10
11	FS	6
12	DP	4
13	TKL	2
14	AS	2
15	BRG	1
16	TK	1
17	TB	1
18	CS	1
19	FU	1
20	SD	1
21	DS	1
<b>Total</b>		<b>649</b>

Source: Department of Agrochemical Management of MARA

**TABLE 6:** Major active ingredients of insecticide products approved of registration renewal released on 15 Aug., 2023

No.	Active ingredient	Number
1	Phoxim	80
2	Abamectin	77
3	Chlorpyrifos	59
4	Lambda-cyhalothrin	46
5	Fenvalerate	40
6	Acetamiprid	39
7	Imidacloprid	31
8	Bifenthrin	30

Source: Department of Agrochemical Management of MARA

**TABLE 7:** Registrants with at least six insecticide products approved of registration renewal released on 15 Aug., 2023

No.	Registrant	Number
1	Shaanxi Sunger Road Bio-science Co., Ltd.	15
2	Shandong Joinful Biotechnology Co., Ltd.	13
3	Shenzhen Noposion Agrochemicals Co., Ltd.	13
4	Jiangsu Rotam Chemistry Co., Ltd.	11
5	Jiangxi Zhonghe Chemical Co., Ltd.	10
6	Jiangxi Zhengbang Crop Protection Co., Ltd.	9
7	ADAMA Ltd.	9
8	Jinan Tianbang Chemical Co., Ltd.	8
9	Henan Yunnong Crop Protection Technology Co., Ltd.	8
10	Sinon Chemical (China) Co., Ltd.	7
11	Zhejiang Well-done Chemical Co., Ltd.	7
12	Anhui Huaxing Chemical Industry Co., Ltd.	7
13	Hailir Pesticides and Chemicals Group Co., Ltd.	7
14	Jiangsu Dongbao Agrochemical Co., Ltd.	7
15	Nantong Jinling Agrochemical Co., Ltd.	6
16	Shanghai Yibang Biological Engineering (Xinyang) Co., Ltd.	6
17	Weihai Hanfu Biochemical Medicine Co., Ltd.	6
18	Hubei Xianlong Chemical Industry Co., Ltd.	6
19	Jiangxi Huihe Chemical Co., Ltd.	6
20	Jiangxi Jiangnan Green Bank Biological Technology Co., Ltd.	6
21	Jiangxi Heyi Chemical Co., Ltd.	6

Source: Department of Agrochemical Management of MARA



## Pest

### NATESC calls for reinforced pest & disease monitoring and early warning after Typhoon Doksuri

Summary: On 31 July, NATESC issued the Notice on Reinforcing Monitoring and Early Warning of Major Pests and Diseases after the Typhoon Doksuri. With intensified efforts put into pest & disease monitoring and early warning, the data collected could provide a reliable basis for scientific control measures with greater precision.

On 31 July, the National Agro-Tech Extension and Service Centre (NATESC) issued the Notice on Reinforcing Monitoring and Early Warning of Major Pests and Diseases after the Typhoon Doksuri. In late July, Typhoon Doksuri, the No.5 typhoon this year, made landfall in southeast part of China; the residual circulation moved north by west and affected deep into inland China till early Aug. The typhoon has increased the possibility of heavy occurrences of migratory pests such as rice leaf roller, rice planthopper and *Spodoptera frugiperda*, as well as epidemic diseases like southern corn rust and rice bacterial diseases. Intensified monitoring and early warning efforts will bring about more reliable data and more scientific precise prevention and control.

The Notice requires that key monitoring areas and targets should be determined. Specifically,

- **For migratory pests:** There are growing uncertainties to which areas may receive large immigrating population, so close monitoring is much needed. At present, it is a critical period for rice leaf roller and rice planthopper to migrate from South China and the Jiangnan region to the middle and lower reaches of the Yangtze River and the Yangtze-Huaihe region, and also a critical period for *Spodoptera frugiperda* to migrate from South China, the Jiangnan region, the middle and lower reaches of the Yangtze River and the Yangtze-Huaihe region to the Huang-Huai area and North China. Affected by the north-going typhoon and the following severe convective weather, it is highly possible that the pests emigrate and land at some concentrated areas at the same time. Moreover, greater randomness decides the whereabouts of these pests. Therefore, local authorities in regions covered by migration paths should pay close attention to the dynamics of adult catches by light trap and other trap devices, study pest ovarian development, judge features of pest sources, and strengthen systemic investigation into the amount of eggs and adults in the field. With such measures taken, pest disasters could be better guarded against.
- **For southern corn rust:** Local authorities in the summer corn production areas in the Yangtze-Huaihe region, the Huang-Huai area and North China should stay on alert for a pandemic. Currently, there are southern corn rust cases in South China. The pathogen will go north along with the typhoon and spread to surrounding Jiangnan region and the middle and lower reaches of the Yangtze River (Jiangxi, Hunan and Hubei, for instance), or go even further north to the Yangtze-Huaihe region, the Huang-Huai area and North China (Anhui, Henan, Shandong and Hebei, for example). High temperature provides suitable conditions for the uredospores to germinate, attack host plants and spread within. Yet the symptoms appear only at relatively low temperatures. Wide-range rainfalls and temporarily lowered temperature brought by the typhoon will easily result in symptoms displaying in large tracts of land and rapidly exacerbating the harms. Expert analysis and forecasting models predict that in the next two to three weeks, there are high risks of southern corn rust outbreaks in most parts of Jiangxi and Hunan, southern Hubei, northern parts of Anhui and Jiangsu, most parts of Henan and Hebei, western Shandong, and some parts of Shanxi and Shaanxi. Authorities there should reinforce field investigation and adopt prevention and control measures in a timely manner to prevent widespread outbreaks. Meanwhile, these areas should, one to three weeks after the typhoon, collect leaves suspected of the disease and conduct early examination and source-tracing. If there are southern corn rust cases, general field surveys should be conducted and accuracy of model forecasts be checked.
- **For rice bacterial diseases and air-borne fungal diseases:** In areas where the typhoon made a landfall, including Fujian, Jiangxi and Anhui, there were thunderstorm, gale and heavy rainfall. Rice crops and leaves are susceptible to physical damage, and thus to infection of bacterial diseases like rice bacterial leaf blight and bacterial stripe, and to infection of air-borne fungal diseases like rice blast. In areas where there were damaged crops, in cool hilly areas where rice blast may occur, and in planting areas of disease





susceptible crop varieties, general field surveys should be conducted in a timely manner to locate infection centres and start treatment as early as possible, and then a pandemic could be avoided.

The Notice also makes strict requirements on information reporting, which could facilitate overall message scheduling across the country. Each and every local government should timely report, via a plant protection and quarantine information management system, a complete set of accurate pest & disease developments that are collected first-hand in field investigations. Regular reporting is conducted on daily, weekly, monthly bases. The development information would shed light on pest migration paths and heavy occurrence areas, and thus provide a scientific basis for cross-region joint monitoring practices and offsite forecasts. In particular,

- In rice growing areas in South China, the Jiangnan region, the middle and lower reaches of the Yangtze River and the Yangtze-Huaihe region, standardised report forms for rice planthopper, rice leaf roller, rice blast and investigation report forms of paddy sweeping and rice pest light trapping should be filled.
- In summer corn growing areas in the Yangtze-Huaihe region, the Huang-Huai area and North China, first-time appearance report forms for *Spodoptera frugiperda* larvae and adults, monthly reports and report forms of southern corn rust occurrence information, etc. should be filled.

The Notice emphasises that occurrence trends should be calculated more accurately and early warnings sent out in a timely manner. According to the results of forecasting consultation and analysis in mid-July, this year would see heavier overall pest & disease occurrence on autumn grain crops than last year. Affected by Typhoon Doksuri, it is highly possible that there would be heavy occurrence of major pests & diseases such as rice leaf roller, rice planthopper, *Spodoptera frugiperda*, southern corn rust and rice bacterial diseases. To provide better guidance on pest & disease control, plant protection stations at all levels should pay close attention to weather changes, intensify exchanges with local meteorological authorities, scientifically assess typhoon's influences upon local crops, make accurate judgements on occurrence trends in the near future, on key areas and on optimum control periods, and then release pest & disease forecasts and early warnings via various channels including official website, Wechat public account, broadcasting and television, message, etc.





## Trade analysis

## China's insecticide formulation Imp. &amp; Exp. see YoY increases in May–June

Summary: In May–June 2023, China's insecticide formulations were mainly exported to Myanmar, Brazil, Nigeria, Thailand, etc., and the export volume grew by some 13% YoY. Meanwhile, import volume of insecticide formulations to China also increased. China mainly imported these products from Japan, France, Indonesia, Singapore, etc. in this period, and the import from Japan made up almost 40% of the total.

According to statistics from General Administration of Customs of China (China Customs), in May–June 2023, China exported 59,951.29 tonnes (actual volume, the same hereafter) of insecticide formulation products with a total export value of USD282.77 million. Major export destinations were Myanmar, Brazil, Nigeria, Thailand, etc. Compared with the export volume achieved in May–June 2022, this year's figure saw a 12.83% increase, or up by some 6,815 tonnes. As regards imports, in the same period, China imported 1,394.29 tonnes of insecticide formulation products with a value totalling USD31.83 million. Major import origins were Japan, France, Indonesia, Singapore, etc. The import volume expanded by 18.50% YoY.

In terms of export, average export price during May–June 2023 went down by 29.91% YoY to USD4.71/kg, mainly affected by weak insecticide market this year. Relatively big inventories in the market dragged the price down continuously. China's insecticide formulations were exported to at least 139 countries and regions in the two months. The export to Myanmar, the largest destination, went up 20.32% YoY to 7,156 tonnes.

In terms of import, import price of insecticide formulations averaged at USD22.83/kg during May–June 2023, down some 13% YoY. The insecticide formulations were mainly imported from 22 countries and regions. Japan was the largest import origin, import volume of insecticide formulations from which accounted for nearly 40% of the total in this period and almost doubled from the volume made during May–June 2022.

**TABLE 8:** May and June exports of insecticide formulations from China, 2023 vs 2022

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
May	29,334,189	4.90	23,807,679	6.91
June	30,617,105	4.53	29,328,367	6.56
<b>Total</b>	<b>59,951,294</b>	<b>4.71</b>	<b>53,136,046</b>	<b>6.72</b>

Note:1. The data were updated to 23 Aug., 2023.

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

Source:China Customs





**TABLE 9: Top 10 destinations of insecticide formulations exported from China, May–June 2023 vs May–June 2022**

No.	May–June 2023			May–June 2022		
	Destination	Volume, tonne	Share	Destination	Volume, tonne	Share
1	Myanmar	7,156	11.94%	Brazil	5,948	11.19%
2	Brazil	6,979	11.64%	Thailand	3,554	6.69%
3	Nigeria	4,098	6.84%	Vietnam	3,102	5.84%
4	Thailand	3,267	5.45%	Indonesia	2,863	5.39%
5	Ghana	2,068	3.45%	Pakistan	2,789	5.25%
6	Bangladesh	2,047	3.41%	Bangladesh	2,760	5.19%
7	Indonesia	2,025	3.38%	Myanmar	2,614	4.92%
8	The Philippines	1,805	3.01%	Nigeria	1,627	3.06%
9	Laos	1,782	2.97%	Cambodia	1,602	3.01%
10	Cote d'Ivoire	1,699	2.83%	Ghana	1,416	2.66%

Note:1. The data were updated to 23 Aug., 2023.

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

Source:China Customs

**TABLE 10: May and June imports of insecticide formulations to China, 2023 vs 2022**

Month	2023		2022	
	Volume, kg	Average price, USD/kg	Volume, kg	Average price, USD/kg
May	771,740	19.76	608,226	19.22
June	622,547	26.62	568,422	33.88
<b>Total</b>	<b>1,394,287</b>	<b>22.83</b>	<b>1,176,648</b>	<b>26.30</b>

Note:1. The data were updated to 23 Aug., 2023.

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

Source:China Customs

**TABLE 11:** Top 10 origins of insecticide formulations imported to China, May–June 2023 vs May–June 2022

No.	May–June 2023			May–June 2022		
	Origin	Volume, tonne	Share	Origin	Volume, tonne	Share
1	Japan	556	39.85%	Japan	298	25.35%
2	France	209	15.02%	France	259	22.03%
3	Indonesia	165	11.82%	The US	195	16.58%
4	Singapore	164	11.73%	Indonesia	116	9.88%
5	South Korea	59	4.22%	South Korea	75	6.38%
6	Australia	54	3.89%	Singapore	68	5.81%
7	Belgium	41	2.96%	Australia	47	4.00%
8	Switzerland	40	2.87%	Israel	38	3.27%
9	India	36	2.61%	Vietnam	31	2.62%
10	The US	23	1.62%	India	21	1.76%

Note:1. The data were updated to 23 Aug., 2023.

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

Source:China Customs



## Brief news

### Inner Mongolia Daoke plans to build 20kt/a pesticide intermediate project

On 27 July, Inner Mongolia Daoke Chemical Co., Ltd. (Inner Mongolia Daoke) obtained the record filling certificate for its 20,000 t/a pesticide intermediate project. The company has planned to invest USD84.17 million (RMB600 million) in the project, which will construct production lines of 15,000 t/a  $\alpha$ -acetyl- $\gamma$ -butyrolactone and 5,000 t/a 2,3-dichloro-5-(trifluoromethyl)pyridine. According to the certificate, the construction will take two years and it would have been completed by July 2025.

Inner Mongolia Daoke was just established in 2023. Its registered business scope covers the manufacture of basic chemical materials, production and sale of chemical products, and provision of technological services and development, consultation, exchange, transfer as well as promotion of technologies.

### First chlorantraniliprole and tea saporin products registered to control fall webworm in China

Late July, a chlorantraniliprole 200g/L SC product from Jiangsu Gongcheng Bio-tech Co., Ltd. (Jiangsu Gongcheng) was approved of pesticide registration, which is registered to control fall webworm on poplar varieties and beet armyworm on cabbages; a tea saporin 30% AS product from Hubei Lvtiandi Biotechnology Co., Ltd. (Hubei Lvtiandi) was approved of adding fall webworm on poplar varieties as a control target. The two products are the first chlorantraniliprole and tea saporin products registered to control fall webworm in China.

As of 8 Aug., 2023, there were 77 valid pesticide products registered to control fall webworm in China, of which 52 were single formulation products, and 25 were mixed formulations. These products cover 21 active ingredients.

Usually, three generations of fall webworm occur within a year, and the pupae overwinter in bark crevices, in wall cracks, under coping stones, under withered grasses, etc. In early May, adults start to emerge, first adult generation comes in mid-July, and second adult generation comes in late-Aug. Occurrence period of larvae is long, and the time of occurrence is scattered. In general, newly hatched larvae feed around the egg mass, and the webs they spun can cause damages. After 4th instar larvae break their webs, the damages they cause disperse. Occurrence period of the second-generation larvae takes the longest time and thus causes the heaviest damages; this generation larvae grow at quite different paces.

### NATESC issues technical points in controlling major pests & diseases on autumn grain crops

Early Aug., the National Agro-Tech Extension and Service Centre (NATESC) issued technical points of the control of major pests & diseases on autumn grain crops, in order to win the tough battle against pests and better safeguard the harvest. Recently, multiple regions in China have suffered heavy rainfalls and typhoons, which would increase risks and damages caused by major pests & diseases, such as rice planthopper, rice leaf roller, *Spodoptera frugiperda* and southern corn rust.

Technical points regarding major pests given by NATESC include:

- For the control of the two major migratory pests (rice leaf roller and rice planthopper) on middle-late rice: To prevent and control rice leaf roller, the peak time for egg hatching should be seized and insecticides timely applied. For the control of rice planthopper, when





the population reaches 1,000 per 100 plants in rice field, insecticides should be applied, such as *Metarhizium anisopliae* CQMa421, *Beauveria bassiana*, etofenprox, pymetrozine, nitenpyram, dinotefuran and triflumezopyrim.

- For the control of *Spodoptera frugiperda*: Joint monitoring should be conducted between big production regions, and a synergy forged in treatment between smaller regions. Control techniques, such as agricultural control, ecological control, biological control, physical and chemical lure and control, and pesticide application in a scientific way, should be used in a proper combination. These techniques should be taken at early stage when damages and threats are still small, and thus the control could be achieved in a sustainable manner.
- For the control of pests & diseases on soybean at the mid-to-late growth stage: Focus should be put on the protection of pods and flowers. Control measures like ecological control, physical and chemical lure and control, biological control, and pesticide application in a scientific way should be adopted. Whole-process comprehensive prevention and control should be carried out to reduce losses.

### Xinjiang Borui Tiansheng plans to construct 13.4kt/a pesticide & intermediate project

In late July, the recordation certificate of Borui Tiansheng (Xinjiang) Biotechnology Co., Ltd. (Xinjiang Borui Tiansheng)'s pesticide and intermediate project was released by local government. The company has planned to invest a total of USD22.95 million (RMB163.60 million) to build 13,400 t/a production lines for dinotefuran, bifenthrin and its intermediates, cyhalothrin and its intermediates, quizalofop-p-ethyl and its intermediates, thifluzamide and its intermediates, bispyribac-sodium and its intermediates, florasulam and its intermediates, penoxsulam and its intermediates, nicosulfuron and its intermediates, prothioconazole and its intermediates, topramezone and its intermediates.

Xinjiang Borui Tiansheng was established on 25 June, 2023, with address registered at No.1–10 Huanghe Road, Halagande Industry Incubator Base, Shawan City, Tacheng Prefecture, Xinjiang Uygur Autonomous Region. Its registered business scope covers R&D of biochemical products and technologies, medical research and experimental development, manufacture of basic chemicals, sale of chemical products (excluding licensed chemical products), production and sale of chemical products, pesticide production, etc.

### Hebei recommends chlorantraniliprole & imidacloprid for post-flood field management

Central and southern parts of Hebei Province suffered precipitation ranging from 60 mm to 994 mm during 28–31 July, under the influence of Typhoon Doksuri's peripheral cloud system. On 1 Aug., Hebei Provincial Agro-Tech Extension Station issued the Suggestions on Field Management Techniques for Main Grain and Oil Crops after Flood Caused by Typhoon. The Suggestions points out that severe waterlogging will lead to poor growth, poor disease resistance, and more wounds in field crops; moreover, sunny days after rains will result in high temperature and humidity in the field, which provides favourable conditions for the occurrence of various pests and diseases. Therefore, comprehensive control measures should be timely taken, which include:

- **For maize crops:** To control migratory pests such as *Spodoptera frugiperda* and cotton bollworm, pesticides like chlorantraniliprole and emamectin benzoate are recommended.
- **For soybean crops:** To control pests like aphids, *Maruca vitrata*, soybean pod borer, *Riptortus pedestris*, planthoppers and thrips, insecticides such as imidacloprid, clothianidin and dinotefuran are recommended. Besides, soybean crops growing poorly, plus continuous high heat, would easily develop stay-green syndrome. To control the disease and at the same time guard against pests, as well as to boost crop stress resistance, foliar application of boron fertilisers and nutrients such as amino acids, amino-oligosaccharides and lentinan, or immune inducers, is recommended.
- **For peanut crops:** To control pests like cotton bollworm and *Spodoptera litura*, foliar spray of pesticides like chlorantraniliprole and





emamectin benzoate is recommend. If there are heavy occurrences of pests and diseases, second-time spray could be carried out at an interval of seven to ten days after the first application.

### **Nanjing Red Sun formally starts chlorantraniliprole production in Chongqing**

On 8 Aug., Nanjing Red Sun Co., Ltd. (Nanjing Red Sun) revealed that the phase I 2,000 chlorantraniliprole TC lines in its Wanzhou base in Chongqing Municipality had been formally put into operation. The company has advantages of full coverage of the industrial chain, advanced technologies, pesticide registration resources and multiple sales channels. Its sales channels, in particular, cover markets at home and abroad. Currently, Nanjing Red Sun supplies chlorantraniliprole products to customers like Sino-Agri Leading Biosciences Co., Ltd. (SAL). In fact, according to a framework agreement signed on 29 April, 2023 between SAL and Nanjing Red Sun's sub-subsidiary Nanjing Huazhou Pharmaceutical Co., Ltd., at least 1,000 tonnes of 97% chlorantraniliprole TC should be supplied to SAL in 2023.

Nanjing Red Sun also revealed that it had developed a production process for cyantraniliprole, an insecticide similar to chlorantraniliprole. It is in the process of registration application for cyantraniliprole products.

### **NATESC suggests emamectin benzoate & chlorfenapyr use limit on cowpea**

On 10 Aug., the National Agro-Tech Extension and Service Centre (NATESC) issued the Resistance Monitoring Report of Cowpea Thrips. It suggested that cowpea growers should, on the basis of local realities, timely adjust insecticide use in the control of thrips, and thus promote safe production.

Thrips are major pests on cowpea. The control mainly relies on chemical insecticides, since such pests are of small size, short generation time and quick propagation. Following NATESC's Work Plan for Resistance Monitoring and Risk Assessment for Agricultural Pests across China in 2023, resistance to insecticides of different categories had been measured on 12 thrip field populations (all are *Megalurothrips usitatus*) collected from 5 provinces (Hainan, Yunnan, Guangxi, Guangdong and Fujian).

The results show that the thrips have developed certain degree resistance to all the insecticides used in the assessment, so that effective resistance management should be started in no time. In general, the thrips have developed low-to-medium resistance to emamectin benzoate and chlorfenapyr, and thus times of their application should be strictly limited. It is recommended that the use of emamectin benzoate and chlorfenapyr products should be kept below one time for each growing season. The results also say that the thrips have been sensitive to or developed low resistance to spinetoram, which means that spinetoram can still play a big role in the control of thrips on cowpea.

### **European Union to relax flonicamid MRLs in some vegetables**

On 10 Aug., European Food Safety Authority (EFSA) released news that it proposed to amend the existing maximum residue limits (MRLs) for the active substance flonicamid in Chinese cabbages, kales and kohlrabies. Based on its risk assessment results, EFSA concluded that the short-term and long-term intake of residues resulting from the use of flonicamid according to the reported agricultural practices was unlikely to present a risk to consumer health.



**TABLE 12:** Proposed amendment to MRLs for flonicamid in three vegetables by EFSA

Commodity	Existing flonicamid MRL (mg/kg)	Proposed flonicamid MRL (mg/kg)
Chinese cabbages	0.03*	0.5
Kales	0.03*	0.5
Kohlrabies	0.03*	0.15

Note:\* Indicates that the MRL is set at the limit of analytical quantification (LOQ).

Source:EFSA

### El report of Shandong Huayang's 5,000 t/a acephate project approved

On 7 Aug., the environmental impact (EI) report of Shandong Huayang Technology Co., Ltd. (Shandong Huayang)'s acephate project was approved by Tai'an Municipal Ecology and Environment Bureau. Shandong Huayang has planned to invest USD43.10 million (RMB307.20 million) to build 5,000 t/a acephate production capacity in the Ningyang Chemical Industrial Park, Ningyang County, Tai'an City, Shandong Province.

Acephate, as a contact and systemic insecticide with high efficacy, low toxicity and low residue, is an acetylated derivative of the highly-toxic insecticide methamidophos, and thus a good substitute for the latter. Acephate is applicable on cotton, tobacco, trees, etc.

### Weifang Maoyuan plans to build thiamethoxam capacity

On 3 Aug., basic environmental impact assessment information of Weifang Maoyuan Biotechnology Co., Ltd. (Weifang Maoyuan)'s 6,000 t/a thiamethoxam and 10,000 t/a 2-chloro-5-chloromethylthiazole project was released at the official website of Weifang Binhai Economic and Technological Development Zone. The company plans to build the new lines in its existing plant located in the Lingang Industrial Park of this development zone.

Thiamethoxam, developed by Novartis AG in 1991, is a second-generation neonicotinoid insecticide. Its mechanism of action is similar to that of imidacloprid. The first thiamethoxam TC registered in China was a 98% TC product from Huludao Lingyun Group Pesticides Chemical Co., Ltd., which was approved on 12 July, 2012. In China, thiamethoxam intermediate 3-methyl-4-nitroiminoperhydro-1,3,5-oxadiazine is only produced in some thiamethoxam TC producers, since wastewater generated in the process is hard to handle. Production capacity for the intermediate mainly concentrates in provinces like Jiangsu and Ningxia.



Price update

Ex-works prices of major insecticides in China, 8 August, 2023

TABLE 13: Ex-works prices of major insecticides in China, 8 August, 2023

Product	20230708		20230808	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
95% Abamectin technical	388,000	53,771.64	388,000	54,430.93
97% Acephate technical	43,000	5,959.23	43,000	6,032.29
95% Acetamiprid technical	82,000	11,364.11	83,000	11,643.73
95% Azocyclotin technical	220,000	30,489.07	220,000	30,862.9
95% Beta-Cypermethrin technical	128,200	17,766.81	128,200	17,984.65
97% Bifenthrin technical	160,000	22,173.87	158,000	22,165.17
95% Buprofezin technical	70,000	9,701.07	70,000	9,820.01
98% Carbofuran technical	100,000	13,858.67	100,000	14,028.59
98% Chlorfenapyr technical	155,000	21,480.94	155,000	21,744.31
95% Chlorfluazuron technical	400,000	55,434.68	400,000	56,114.36
95% Chlorpyrifos technical	35,000	4,850.53	37,900	5,316.84
94% Cypermethrin technical	62,000	8,592.37	58,000	8,136.58
99% Cyromazine technical	132,000	18,293.44	132,000	18,517.74
98% Deltamethrin technical	390,000	54,048.81	390,000	54,711.5
95% Diafenthiuron technical	112,000	15,521.71	112,000	15,712.02
98% Dimethoate technical	47,600	6,596.73	47,600	6,677.61
70% Emamectin benzoate technical	359,100	49,766.48	367,500	51,555.07
92% Fenvalerate technical	135,000	18,709.2	145,000	20,341.46
95% Fipronil technical	430,000	59,592.28	430,000	60,322.94
98% Hexaflumuron technical	460,000	63,749.88	460,000	64,531.52



97% Imidacloprid technical	90,000	12,472.8	90,900	12,751.99
98% Isoprocarb technical	45,500	6,305.69	45,500	6,383.01
95% Lambda-cyhalothrin technical	118,000	16,353.23	121,000	16,974.59
90% Malathion technical	38,000	5,266.29	38,000	5,330.86
95% Methidathion technical	90,000	12,472.8	90,000	12,625.73
Methomyl 90% SP	59,000	8,176.61	65,000	9,118.58
98% Methomyl technical	67,000	9,285.31	73,900	10,367.13
75% Omethoate technical	52,000	7,206.51	52,000	7,294.87
90% Phoxim technical	39,000	5,404.88	39,000	5,471.15
90% Profenofos technical	75,000	10,394	75,000	10,521.44
90% Propargite technical	60,000	8,315.2	60,000	8,417.15
95% Pymetrozine technical	114,000	15,798.88	115,000	16,132.88
95% Pyridaben technical	102,000	14,135.84	98,000	13,748.02
97% Spirodiclofen technical	150,000	20,788	147,000	20,622.03
85% Triazophos technical	69,000	9,562.48	69,000	9,679.73

Note: Ex-works price includes VAT.

Source: CCM

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







TABLE 14: Shanghai Port prices of major insecticides in China, 8 August, 2023

Product	20230708		20230808	
	Original Price (RMB/t)	Price (USD/t)	Original Price (RMB/t)	Price (USD/t)
95% Abamectin technical	388,500	53,840.93	388,500	54,501.07
97% Acephate technical	43,500	6,028.52	43,500	6,102.44
95% Acetamiprid technical	82,500	11,433.4	83,500	11,713.87
95% Azocyclotin technical	220,500	30,558.37	220,500	30,933.04
95% Beta-Cypermethrin technical	128,700	17,836.11	128,700	18,054.8
97% Bifenthrin technical	160,500	22,243.16	158,500	22,235.32
95% Buprofezin technical	70,500	9,770.36	70,500	9,890.16
98% Carbofuran technical	100,500	13,927.96	100,500	14,098.73
98% Chlorfenapyr technical	155,500	21,550.23	155,500	21,814.46
95% Chlorfluazuron technical	400,500	55,503.97	400,500	56,184.5
95% Chlorpyrifos technical	35,500	4,919.83	38,400	5,386.98
94% Cypermethrin technical	62,500	8,661.67	58,500	8,206.73
99% Cyromazine technical	132,500	18,362.74	132,500	18,587.88
98% Deltamethrin technical	390,500	54,118.1	390,500	54,781.64
95% Diafenthiuron technical	112,500	15,591	112,500	15,782.16
98% Dimethoate technical	48,100	6,666.02	48,100	6,747.75
70% Emamectin benzoate technical	359,600	49,835.77	368,000	51,625.21
92% Fenvalerate technical	135,500	18,778.5	145,500	20,411.6
95% Fipronil technical	430,500	59,661.57	430,500	60,393.08
98% Hexaflumuron technical	460,500	63,819.17	460,500	64,601.66
97% Imidacloprid technical	90,500	12,542.1	91,400	12,822.13
98% Isoprocarb technical	46,000	6,374.99	46,000	6,453.15





95% Lambda-cyhalothrin technical	118,500	16,422.52	121,500	17,044.74
90% Malathion technical	38,500	5,335.59	38,500	5,401.01
95% Methidathion technical	90,500	12,542.1	90,500	12,695.87
Methomyl 90% SP	59,500	8,245.91	65,500	9,188.73
98% Methomyl technical	67,500	9,354.6	74,400	10,437.27
75% Omethoate technical	52,500	7,275.8	52,500	7,365.01
90% Phoxim technical	39,500	5,474.17	39,500	5,541.29
90% Profenofos technical	75,500	10,463.3	75,500	10,591.59
90% Propargite technical	60,500	8,384.49	60,500	8,487.3
95% Pymetrozine technical	114,500	15,868.18	115,500	16,203.02
95% Pyridaben technical	102,500	14,205.14	98,500	13,818.16
97% Spirodiclofen technical	150,500	20,857.3	147,500	20,692.17
85% Triazophos technical	69,500	9,631.78	69,500	9,749.87

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 August, 2023





TABLE 15: FOB Shanghai prices of major insecticides in China, 8 August, 2023, USD/t

Product	20230708	20230808
95% Abamectin technical	52,397.24	53,039.68
97% Acephate technical	5,704.92	5,774.87
95% Acetamiprid technical	11,144	11,418.2
95% Azocyclotin technical	29,829.47	30,195.21
95% Beta-Cypermethrin technical	16,786.94	16,992.76
97% Bifenthrin technical	20,892.44	20,884.25
95% Buprofezin technical	9,569.37	9,686.7
98% Carbofuran technical	13,604.98	13,771.79
98% Chlorfenapyr technical	20,995.62	21,253.05
95% Chlorfluazuron technical	54,042.5	54,705.11
95% Chlorpyrifos technical	4,826.43	5,290.41
94% Cypermethrin technical	8,171.86	7,738.37
99% Cyromazine technical	17,285.32	17,497.26
98% Deltamethrin technical	50,808.75	51,431.72
95% Diafenthiuron technical	14,682.06	14,862.08
98% Dimethoate technical	6,334.98	6,412.65
70% Emamectin benzoate technical	48,500	50,243.07
92% Fenvalerate technical	17,697.13	19,241.08
95% Fipronil technical	58,066.35	58,778.3
98% Hexaflumuron technical	62,130.44	62,892.23
97% Imidacloprid technical	12,227.45	12,501.14
98% Isoprocarb technical	6,061.98	6,136.3
95% Lambda-cyhalothrin technical	15,433.9	16,020.33





90% Malathion technical	5,086.97	5,149.34
95% Methidathion technical	12,276.42	12,426.94
Methomyl 90% SP	8,068.69	8,998.23
98% Methomyl technical	9,965.46	11,126.52
75% Omethoate technical	6,908.7	6,993.41
90% Phoxim technical	5,349.48	5,415.07
90% Profenofos technical	9,881.29	10,002.44
90% Propargite technical	8,233.24	8,334.19
95% Pymetrozine technical	14,949.01	15,265.04
95% Pyridaben technical	13,889.49	13,508.42
97% Spirodiclofen technical	19,637.97	19,481.18
85% Triazophos technical	9,471.09	9,587.22

*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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