

# **Production projects of China's pesticide industry in 2023**

**The Second Edition**

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## **Executive summary**

In Jan.–Sept. 2023, a total of 92 pesticide projects pertaining to pesticide technical, formulations and intermediates were planned or constructed by China's pesticide enterprises to better adapt to their business scale and long-term development.

In terms of project capacity by regional distribution, most scale pesticide capacity investment projects are located in Northwest, North China, East China and Central China. Among the pesticide technicals involved in the 92 Chinese pesticide projects in planning or construction progress during Q1–Q3, chlorantraniliprole, glufosinate-P and thiamethoxam are the top 3 active ingredients in terms of project amount. As of Oct. 2023, 87% of the 92 ongoing pesticide projects in China's pesticide industry in the first three quarters are in the planning, EIA process or have received EI report approvals; meanwhile, only 13% were under construction, trial production or have completed construction.

In China's 92 new projects that are in the planning and construction stage, 24% of the new capacities are related to production of intermediates only, while 34% and 16% are of pesticide technical only and formulation only, respectively. Among these pesticide projects in China's pesticide industry during Q1–Q3 2023, 46 were involving intermediates only or pesticide technical & intermediates.

## Methodology

The report is drafted by diverse methods as follows:

### - Desk research

The sources of desk research are various, including published magazines, journals, government statistics, industrial statistics, customs statistics, association seminars as well as information from the Internet.

### - Internet

CCM contacted with players in the domestic agrochemical industry through B2B websites and software as well as obtained registration information on the internet.

### - Data processing and presentation

The data collected and compiled are sourced from:

- CCM's database
- China Customs
- Published articles in periodicals, magazines, journals and third-party databases
- Statistics from governments and international institutes
- Telephone interviews with domestic producers, joint ventures, service suppliers and governments
- Third-party data providers
- Comments from industrial experts
- Professional databases from other sources
- Information from the internet

The data from various sources have been combined and cross-checked to make this report as precise and scientific as possible. Throughout the process, a series of internal discussions were held in order to analyse the data and draw the conclusions.

In this report, the USD/CNY exchange rate used is USD1.00=CNY7.1789 sourced from the People's Bank of China on 9 Oct., 2023.

## 1 Overview of China's on-going pesticide projects

Since late 2022, China's pesticide market witnessed weak consumption of technical stocks and downstream demand. During H1 2023, most pesticide varieties in China experienced continuous price downturn from those in 2022; as of Sept., with semi-annual reports released in succession, only a few companies had managed to achieve growths in operating results, while most of the industrial players raked in decreasing incomes; some even suffered losses in net profit. On the positive side, pesticide prices stabilised in H2 and began to tune up gradually. Under this circumstance, it is worth paying attention to the measures taken by Chinese pesticide enterprises to better adapt to the needs of business scale and long-term development.

According to public information from environmental impact assessment released on government websites and from company announcement, a total of 92 pesticide projects pertaining to pesticide technical, formulations and intermediates were in planning or construction stage during Jan.–Sept. 2023, which will be briefly introduced and analysed in this issue to observe and discuss the development of China's agrochemical industry.

### 1.1 Project capacity and regional distribution

In Q1–Q3 2023, there were 92 Chinese pesticide projects in planning or construction progress, with a combined new capacity of 2,055,004 t/a, up by 3% YoY. Among the 92 concerning projects in this issue, those projects involving pesticide technical in China are mainly located in the traditional pesticide production bases in North and East China, especially in Inner Mongolia Autonomous Region, Hebei Province and Shandong Province; those with large designed capacities for pesticide technical and the intermediates are in Gansu Province, Shandong Province and Shaanxi Province. Notably, a pesticide technical project with a designed production capacity of 200,000 t/a is sited overseas during the period.

East China (including Jiangsu Province, Shandong Province, Anhui Province, Jiangxi Province and Zhejiang Province) was the Top1 location with 36 projects of construction compared with the other places in China. Thereinto, 16 new projects in East China were designed to build capacities for pesticide technicals only. However, those production projects with higher scale of designed capacities were located in Gansu Province, Hebei Province and Ningxia Hui Autonomous Region, etc., targeting for the intermediates, as well as the pesticide technicals and intermediates.

Table 1.1-1 Number and capacity of projects by region, as of Oct., 2023

No.	Location	Province/Autonomous region/Municipality/Region	Total new capacity, t/a	Number of project
1	East China	Jiangsu Province, Shandong Province, Anhui Province, Jiangxi Province, Zhejiang Province	301,442.00	36
2	Northwest	Gansu Province, Ningxia Hui Autonomous Region, Shaanxi Province, Xinjiang Uyghur Autonomous Region	700,800.00	26
3	North China	Hebei Province, Inner Mongolia Autonomous Region	445,704.00	15
4	Central China	Hubei Province, Henan Province, Hunan Province	353,858.00	8
5	Northeast	Liaoning Province, Jilin Province	21,200.00	4
6	South China	Guangxi Zhuang Autonomous Region	30,000.00	1
7	Southwest	Chongqing Municipality	2,000.00	1
8	Overseas	Indonesia	200,000.00	1
<b>Total</b>			<b>2,055,004.00</b>	<b>92</b>

Source: CCM

As of Oct., in Gansu Province, there are 20 projects in the planning and construction stage, with a combined new capacity of 433,400 t/a (=21.1% of the total capacities of the 92 concerning projects), 228,600 t/a of which contains pesticide intermediates only. Hebei Province has 8 projects with designed production capacities of 287,304 t/a (=14.0% of the total capacities of the 92 concerning projects), 210,000 t/a of which contains pesticide formulations only.

Table 1.1-2 Capacity of 92 projects by province/autonomous region/municipality/region, t/a

No.	Province/Autonomous region/Municipality/Region	Pesticide intermediates	Pesticide technical	Pesticide technical & intermediates	Pesticide technical, formulations & intermediates	Pesticide formulations	Pesticide technical & formulations	Total
1	Gansu Province	228,600.00	7,800.00	170,000.00	15,000.00	/	12,000.00	433,400.00
2	Hebei Province	600.00	35,500.00	/	/	210,000.00	41,204.00	287,304.00
3	Henan Province	/	/	2,200.00	252,000.00	/	/	254,200.00
4	Ningxia Hui Autonomous Region	228,000.00	6,000.00	/	/	/	/	234,000.00
5	Overseas	/	200,000.00	/	/	/	/	200,000.00
6	Inner Mongolia Autonomous Region	20,000.00	130,000.00	8,400.00	/	/	/	158,400.00
7	Shandong Province	5,000.00	32,300.00	83,200.00	/	2,700.00	14,180.00	137,380.00
8	Hubei Province	26,058.00	10,000.00	13,600.00	/	/	30,000.00	79,658.00
9	Jiangsu Province	25,100.00	4,000.00	/	/	34,150.00	6,900.00	70,150.00
10	Zhejiang Province	37,000.00	12,750.00	/	/	/	/	49,750.00
11	Guangxi Zhuang Autonomous Region	30,000.00	/	/	/	/	/	30,000.00
12	Jiangxi Province	2,612.00	19,000.00	2,750.00	/	/	/	24,362.00
13	Hunan Province	/	20,000.00	/	/	/	/	20,000.00
14	Shaanxi Province	/	/	20,000.00	/	/	/	20,000.00
15	Anhui Province	3,600.00	14,200.00	2,000.00	/	/	/	19,800.00
16	Liaoning Province	/	10,700.00	8,000.00	/	/	/	18,700.00
17	Xinjiang Uyghur Autonomous Region	/	/	13,400.00	/	/	/	13,400.00
18	Henan Province	2,500.00	/	/	/	/	/	2,500.00
19	Chongqing Municipality	/	2,000.00	/	/	/	/	2,000.00
<b>Total</b>		<b>609,070.00</b>	<b>504,250.00</b>	<b>323,550.00</b>	<b>267,000.00</b>	<b>246,850.00</b>	<b>104,284.00</b>	<b>2,055,004.00</b>

Source: CCM

## 1.2 Concerning active ingredients

According to the 92 Chinese pesticide projects in planning or construction progress in Q1–Q3 2023, the top 3 pesticide technicals in terms of project amount are chlorantraniliprole (9), glufosinate-P (7) and thiamethoxam (6).

Table 1.2-1 Active ingredients involved in three or above projects, Q1–Q3 2023

No.	Concerning products	Number of project	Ranking	Category
1	Chlorantraniliprole	9	1	Insecticide
2	Glufosinate-P	7	2	Herbicide
3	Thiamethoxam	6	3	Insecticide
4	Glufosinate-Ammonium	5	4	Herbicide
5	Prothioconazole	5	4	Fungicide
6	Chlorfenapyr	5	4	Insecticide
7	Pymetrozine	4	5	Insecticide
8	Lambda-Cyhalothrin	4	5	Insecticide
9	Clethodim	4	5	Herbicide
10	MCPA	4	5	Herbicide
11	Flonicamid	4	5	Insecticide
12	Pyraclostrobin	3	6	Fungicide
13	Quizalofop-P-ethyl	3	6	Herbicide
14	Azoxystrobin	3	6	Fungicide

Source: CCM

By category, the top 10 active ingredients in terms of capacity are listed as below.

Table 1.2-2 Top 10 herbicide technicals in 92 pesticide projects by capacity, Q1–Q3 2023

No.	Concerning products	New capacity, t/a	Number of project
1	Glyphosate	200,000	1
2	Glufosinate-P	123,000	6
3	Clethodim	49,300	4
4	Glufosinate-Ammonium	34,000	5
5	2,4-D	20,000	1
6	MCPA	18,000	4
7	Acetochlor	8,000	1
8	Tebuthiuron	5,400	1
9	Bentazone	3,000	1
10	Mesotrione	3,000	1

Source: CCM

Table 1.2-3 Top 10 insecticide technicals in 92 pesticide projects by capacity, Q1–Q3 2023

No.	Concerning products	New capacity, t/a	Number of project
1	Chlorantraniliprole	34,000	9
2	Thiamethoxam	22,700	6
3	Chlorfenapyr	8,700	5
4	Cyantraniliprole	6,000	2
5	Acetamiprid	5,000	1
6	Lambda-Cyhalothrin	4,600	3
7	Pymetrozine	4,200	4
8	Lufenuron	2,600	2
9	Emamectin benzoate	2,200	2
10	Fenpropathrin	2,200	2

Source: CCM



Table 1.2-4 Top 10 fungicide technicals in 92 pesticide projects by capacity, Q1–Q3 2023

No.	Concerning products	New capacity, t/a	Number of project
1	Mancozeb	80,000	1
2	Difenoconazole	6,000	2
3	Prothioconazole	4,600	5
4	Trifloxystrobin	3,000	2
5	Prochloraz	3,000	2
6	Pyraclostrobin	2,400	3
7	Picoxystrobin	2,000	1
8	Tebuconazole	2,700	3
9	Azoxystrobin	1,600	3
10	Dimethomorph	1,500	1
11	Boscalid	1,500	1

Source: CCM

### 1.3 Construction progress

In Q1–Q3 2023, there are 92 ongoing pesticide projects in China's pesticide industry which can be broken down by progress. As of Oct. 2023, most of ongoing pesticide projects in China's pesticide industry (80, =87% of the total) have been planned, 68 of which was in EIA process or with EI report approved; the rest (12, =13% of the total) were under construction, in trial production or with construction completed and put into operation.

Table 1.3-1 Project progress of 92 pesticide projects in China, as of Oct., 2023

No.	Status	Pesticide technical	Pesticide technical & intermediates	Pesticide intermediates	Pesticide technical & formulations	Pesticide formulations	Pesticide technical, formulations & intermediates	Total	
1	Planned	Planning	6	1	4	/	/	1	12
		In EIA process	12	13	13	5	3	/	46
		EI report approved	8	5	5	2	2	/	22
2	Construction	Under construction	1	3	/	1	/	/	5
		Trial production	1	2	/	/	/	/	3
		Construction completed	3	/	/	/	/	1	4
<b>Total</b>		<b>31</b>	<b>24</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>2</b>	<b>92</b>	

Note: EIA refers to environmental impact assessment; EI report refers to environmental impact report; Projects under the status of planning include but not limit to those under IPO planning, government record or agreement establishment.

Source: CCM

## 1.4 Product type

As of Oct., 2023, the 92 pesticide projects in the planning and construction stage reached a total new capacity of 2.06 million t/a, being designed to produce a single product type or product combination of pesticide technical, formulation and intermediates. Thereinto, 31 projects are related to production of pesticide technical only, 22 ones are of intermediates only, and only 5 are designed for formulation production only; while the rest are 37.0% for mixtures of these two or three types.

In terms of new capacity, projects of intermediate-only account for the most, hitting 609,070 t/a (=29.6% of the total), followed by those of pesticide technical-only and those of pesticide technical & intermediates, i.e. 504,250 t/a (=24.5% of the total) and 323,550 t/a (=15.7% of the total), respectively. Regarding formulation-only projects, though only 5 in amount, it totalled a capacity of 246,850 t/a (=12.0% of the total). Compared with Q1–Q3 2022, capacities for intermediate-only and pesticide technical & intermediate projects saw a decline of 48.0% YoY and 7.0% YoY separately, while those for technical-only and formulation-only projects jumped 128.7% YoY and 140.6% YoY, respectively. It is worth mentioning that only two projects were for technical, formulation & intermediates in 2023, with the capacity of 267,000 t/a, marking 346.5% YoY compared with the same period of last year.

Table 1.4-1 Capacity of 92 projects by product type, Q1–Q3 2023

No.	Product type	Province/Autonomous region/Municipality/Region	Capacity, t/a	YoY change
1	Pesticide intermediates	Gansu Province	228,600.00	/
		Ningxia Hui Autonomous Region	228,000.00	
		Zhejiang Province	37,000.00	
		Guangxi Zhuang Autonomous Region	30,000.00	
		Hubei Province	26,058.00	
		Jiangsu Province	25,100.00	
		Inner Mongolia Autonomous Region	20,000.00	
		Shandong Province	5,000.00	
		Anhui Province	3,600.00	
		Jiangxi Province	2,612.00	
		Henan Province	2,500.00	
Hebei Province	600.00			
		<b>Sub-total</b>	<b>609,070.00</b>	<b>-48.0%</b>
2	Pesticide technical	Overseas	200,000.00	/
		Inner Mongolia Autonomous Region	130,000.00	
		Hebei Province	35,500.00	
		Shandong Province	32,300.00	
		Hunan Province	20,000.00	

No.	Product type	Province/Autonomous region/Municipality/Region	Capacity, t/a	YoY change
		Jiangxi Province	19,000.00	
		Anhui Province	14,200.00	
		Zhejiang Province	12,750.00	
		Liaoning Province	10,700.00	
		Hubei Province	10,000.00	
		Gansu Province	7,800.00	
		Ningxia Hui Autonomous Region	6,000.00	
		Jiangsu Province	4,000.00	
		Chongqing Municipality	2,000.00	
		<b>Sub-total</b>	<b>504,250.00</b>	
3	Pesticide technical & intermediates	Gansu Province	170,000.00	/
		Shandong Province	83,200.00	
		Shaanxi Province	20,000.00	
		Hubei Province	13,600.00	
		Xinjiang Uyghur Autonomous Region	13,400.00	
		Inner Mongolia Autonomous Region	8,400.00	
		Liaoning Province	8,000.00	
		Jiangxi Province	2,750.00	
		Henan Province	2,200.00	
		Anhui Province	2,000.00	
<b>Sub-total</b>	<b>323,550.00</b>	<b>-7.0%</b>		
4	Pesticide formulations	Hebei Province	210,000.00	/
		Jiangsu Province	34,150.00	
		Shandong Province	2,700.00	
		<b>Sub-total</b>	<b>246,850.00</b>	
5	Pesticide technical, formulations & intermediates	Henan Province	252,000.00	/
		Gansu Province	15,000.00	
		<b>Sub-total</b>	<b>267,000.00</b>	

No.	Product type	Province/Autonomous region/Municipality/Region	Capacity, t/a	YoY change
6	Pesticide technical & formulations	Hebei Province	41,204.00	/
		Hubei Province	30,000.00	
		Shandong Province	14,180.00	
		Gansu Province	12,000.00	
		Jiangsu Province	6,900.00	
		<b>Sub-total</b>	<b>104,284.00</b>	<b>52.6%</b>
<b>Total</b>			<b>2,055,004.00</b>	<b>3.0%</b>

Source: CCM

## 2 China's major pesticide projects

### 2.1 Large-scale projects for major active ingredients

In the 92 Chinese pesticide projects planned or constructed during Q1–Q3 2023, active ingredients, such as mancozeb, clethodim, glyphosate and 2,4-D, were involved in projects with large production capacities. Notably, glufosinate-ammonium and glufosinate-P had enjoyed the same popularity as previous years, featuring both scale capacity and large project amount. As of Oct. 2023, concerning large-scale projects for the above-mentioned pesticide technicals are under planning or construction and yet to put into operation, with details of some major ones as below:

- **Mancozeb and Clethodim:** On 1 Aug., the recordation certificate of Inner Mongolia Miraculous Crop Science Co., Ltd.'s 30,000 t/a clethodim project and 80,000 t/a mancozeb project were publicised. With clethodim's investment totalling USD69.69 million (RMB500.29 million) and that of mancozeb was USD111.44 million (RMB800 million). Both projects will be constructed in the Bayin Aobao (Bayan Ovoo) Industrial Park, Alxa High-Tech Industrial Development Zone, Alxa League, Inner Mongolia Autonomous Region. Inner Mongolia Miraculous is a subsidiary of Lianyungang Liben Crop Science Co., Ltd.

- **Glyphosate:** On 28 Aug., Sichuan Hebang Biotechnology Co., Ltd. held an online signing ceremony with PT BERKAH KAWASAN MANYAR SEJAHTERA (BKMS) and PT AKR Corporindo Tbk (AKR). The three parties signed a letter of intent for an USD800 million (RMB5.74 billion)-worth investment program, which would construct a chemical production base in the Java Integrated Industrial & Ports Estate (JIPE), Surabaya, East Java, Indonesia; the base will be used for the production of sodium carbonate, ammonium chloride, glyphosate, etc. According to the plan, production capacity for glyphosate is designed at 200,000 t/a.

- **2,4-D:** On 28 Dec., 2022, the Environment Impact (EI) Report of Gansu Xinhengmao Technology Co., Ltd.'s chlorophenol production base project (phase I) were publicised. The project, with an investment of USD55.72 million (RMB400 million) and a plant area totalling about 11.47 ha, has two phases of construction, including the production lines for 20,000 t/a 2,4-D TC and 40,000 t/a chlorophenol (phase I), 2,000 t/a prochloraz TC and 10,000 t/a chloroacetic acid (phase I) and others. As of Sept. 2023, the construction of this project was announced to be completed.

- **Glufosinate-ammonium:** In Aug., the environmental impact (EI) report of Hebei Nongbiwei Biotechnology Co., Ltd. (Hebei Nongbiwei)'s large-scale green pesticide technical and by-product project was published. The company has planned to invest USD509.52 million (RMB3.63 billion) to construct the project in the eastern part of Cangzhou Lingang Economic and Technological Development Zone, Cangzhou City, Hebei Province. Once completed, the company will own technical production capacity of 10,000 t/a glufosinate-ammonium, 6,300 t/a clethodim (including TK), 5,400 t/a tebutiuron, 3,000 t/a mesotrione, 2,400 t/a niclosamide, 1,800 t/a imazapyr, 2,000 t/a nicosulfuron, 1,200 t/a fenclorim, 1,000 t/a quizalofop-p-ethyl, and also capacities for some by-products like salts, hydrochloric acid and methanol. Hebei Nongbiwei was established in Dec. 2021., and its business scope covers the manufacture of chemical pesticides.

- **Glufosinate-P:** On 1 Aug., Baicao Yuan Biology Co., Ltd. chaired a signing ceremony for an investment agreement on "Series High-efficiency and Environment-friendly Pesticide Construction Project". With a total investment of USD699.13 million (RMB5.02 billion) and an area of 73.33 ha, the project was to leverage the standardised plants in Yima City Industrial Cluster and auxiliary PPP (Public-Private Partnerships) projects, undergoing a two-phased construction for 86,000 t/a methyldiethoxyphosphine and other intermediates, 76,000 t/a glufosinate-P technical and other technical products, and 90,000 t/a glufosinate-P formulations and other formulations.

### 2.2 Constructed projects for new capacity in 2023

Among 92 projects of pesticide in China, 12 projects held by the Chinese pesticide enterprises of different sizes were in the construction stage (under construction, trial production and construction completed). Thereinto, seven projects are expected to add new capacity in China in 2023. Specifically, four production projects run by four enterprises were put into operation, adding a total capacity of 12,200 t/a in 2023; while three held by three enterprises were under trial run, adding 26,200 t/a in 2023.

### **Under trial run (totalling 26,200 t/a)**

- Two technical & intermediate projects for trial production:
  - On 28 April, Hebi Baoruide Chemical Co., Ltd.'s 2,200 t/a chemicals reconstruction project approved on 30 June, 2022 was under trial run, but yet to pass the acceptance of environmental protection for completion of construction project. The project was aimed to remove the fluorosulfide diphenyl ether production lines in the second workshop and build lines for 1,200 t/a ethylene oxide and 1,000 t/a tebuconazole TC.
  - On 7 June, Shandong Cynda Chemical Co., Ltd. announced that its wholly-owned subsidiary, Liaoning Cynda Chemical Co., Ltd. had completed the construction of main body, equipment installation and testing of the 1,000 t/a imazapyr TC and 3,000 t/a pesticide intermediate project, and put the lines into trial production.
- One technical-only project for trial production: In July, Lier Chemical Co., Ltd. announced its subsidiary Hunan Lier Biotech Co., Ltd.'s 20,000 t/a Enzymatic Method Glufosinate-P Project in Hunan was under trial run.

### **In operation stage (totalling 12,200 t/a)**

- One technical, formulation & intermediates project entered partial production: On 14 August, a "15,000 t/a Pesticide Technical, Formulation and Intermediate Construction project" of Zhejiang Wynca Chemical Group Co., Ltd.'s second-tier subsidiary Gansu West Xinyu Chemical Co., Ltd. has been put into inspection acceptance, including production lines for 1,700 t/a 2,4-dichloro-5-nitrophenyl isopropyl ether, 1,200 t/a nicosulfuron TC, 1,000 t/a bentazone TC, 1,000 t/a quizalofop-P-ethyl TC, 600 t/a fluroxypyr-meptyl TC, 500 t/a quizalofop-P-tefuryl TC and 300 t/a penoxsulam TC, totalling 6,300 t/a.
- Three technical only projects entered production:
  - Qilu Synva Pharmaceutical Co., Ltd.'s 2,000 t/a emamectin benzoate TC capacity expansion and upgrading project was announced to put into production in June.
  - On 24 July, 2023, Yongnong BioSciences Co., Ltd. publicised the draft for partial acceptance of its 8,000 t/a high-efficiency pesticide TC technology renovation project, including production lines for 100 t/a azoxystrobin TC, 200 t/a pyraclostrobin TC, 200 t/a epoxiconazole TC, 200 t/a thiamethoxam TC, 1,200 t/a bifentazate TC and 1,402 t/a co-produced sodium sulfate, totalling 1,900 t/a. The above constructed part has entered stable trial production in May 2023 and met the conditions of acceptance for completion of construction project.
  - In May 2023, Chongqing Huage Biochemical Co., Ltd., a wholly-owned subsidiary of Nanjing Red Sun Co., Ltd. (Nanjing Red Sun), had the 2,000 t/a chlorantraniliprole product chain entering trial production. On 8 Aug., Nanjing Red Sun disclosed the project had entered smooth production in Wanzhou Base of Chongqing Municipality.

### **-Updates on constructed project in 2022**

In Feb., 2023, Anhui Ningyitai Science & Technology Co., Ltd.'s 15,500 t/a new pesticide technicals and related products project, which has put into trial production in Nov. 2022, applied for a commissioning time extension of 3 months. The reason is that the environmental protection facilities are too low to handle the load, and do not reach the sustained and stable normal operating conditions. The first batch of Phase I construction included production plants and supporting workshops for 3,000 t/a lufenuron TC, 1,000 t/a flumioxazin TC, etc.

### **2.3 Major projects for China's new pesticides and bio-pesticides**

Among the 92 planned or construction projects in Q1–Q3 2023, 5 were designed for China's new pesticides and/or bio-pesticides, handled by 4 pesticide enterprises, namely Jiangshan (Yichang) Crop Technology Co., Ltd. (1), Zhejiang Udragon Pesticides and Chemicals Co., Ltd. (1), Weifang Nuchlor Chemical Co., Ltd. (1) and Shandong Lukang Biological Pesticides Co., Ltd. (2),

#### **-Benmicao-zuo (JS-T205)**

To be specified, the new green herbicide TC and formulation project of Jiangshan (Yichang) Crop Technology Co., Ltd., wholly-owned subsidiary of Nantong Jiangshan Agrochemical & Chemicals Co., Ltd. (Nantong Jiangshan) will construct 500 t/a JS-T205 and formulation production lines and ancillary installations, with an investment of USD110.74 million (RMB794.99 million). Nantong Jiangshan's new product JS-T205 is a new highly effective green non-selective herbicide.

### **-Thiotraniliprole**

On 25 June, 2023, Zhejiang Udragon Pesticides and Chemicals Co., Ltd. released the environmental impact (EI) assessment of its subsidiary Zhejiang Udragon Bioscience Co., Ltd. (Zhejiang Udragon)'s 2,050 t/a pesticide TC technological renovation project for public comments. Invested with USD62.68 million (RMB450 million), the project aims to form capacities for pesticide technicals including 600 t/a prothioconazole, 50 t/a ipconazole, 200 t/a metconazole, 200 t/a cyproconazole, 200 t/a tiorantraniliprole, 200 t/a zoxamide, 50 t/a famoxadone, 50 t/a spirotetramat, 200 t/a MPPZ, 50 t/a benziothiazolinone, 250 t/a fludioxonil and by-products. Thiotraniliprole, featuring the same mechanism as that of chlorantraniliprole, is a bisamide insecticide jointly developed by Zhejiang Udragon and Qingdao University of Science and Technology and first registered in 2021.

### **-Fluchloraminopyr**

In late Aug., the Binhai Branch of the Bureau of Ecology and Environment of Weifang City approved the environmental impact report of Weifang Nuchlor Chemical Co., Ltd. (Weifang Nuchlor)'s 2,000 t/a fluroxypyr technological transformation project. Relying on the infrastructure and equipment of the existing 2,000 t/a fluroxypyr project, the company has planned to add new equipment and production capacity of 1,300 t/a fluchloraminopyr TC and at the same time maintain 2,000 t/a fluroxypyr capacity via improving production process. Total investment for the project is USD15.78 million (RMB113.29 million). Fluchloraminopyr is a new-generation synthetic hormone herbicide independently developed by Qingdao KingAgroot Resistant Weed Management Co., Ltd. and approved common name by ISO in June 2022.

### **-Bio-pesticides**

Meanwhile, Shandong Lukang Biological Pesticides Co., Ltd. (Shandong Lukang), a wholly-owned subsidiary of Shandong Lukang Pharmaceutical Co., Ltd. (Lukang Pharma), has two bio-pesticides projects representing 15,017 t/a capacity of pesticide technical & formulations in aggregate.

- On 13 March, 2023, the Zoucheng Municipal Government publicised the environmental impact (EI) report of the bio-pesticide production base construction project of Shandong Lukang with investment of USD78.28 million (RMB561.95 million). The project includes building capacities for 1,580 t/a pesticide technicals (1,000 t/a kasugamycin, 200 t/a polyoxin, 200 t/a *Bacillus thuringiensis*, 100 t/a aconetin, 50 t/a spinosad and 30 t/a gibberellic acid A3) and 12,600 t/a pesticide formulations (3,000 t/a *Bacillus thuringiensis* 8,000 IU/μL SC, 1,000 t/a *Bacillus subtilis* 100 billion spores/g WP, 850 t/a polyoxin 10% SG, 800 t/a kasugamycin 6% AS, 500 t/a phycion 0.8% SC, 500 t/a polyoxin 5% AS, 300 t/a spinosad 10% SC, 150 t/a trifloxystrobin·tebuconazole 75% WG and etc.). Thereinto, *Bacillus thuringiensis* and spinosad are both bio insecticides.
- On 5 May, 2023, the EI report of Shandong Lukang's pesticide formulation upgrading project with an investment of USD9.59 million (RMB68.86 million) was approved. The project includes capacity construction for 1,505 t/a *Bacillus thuringiensis* SC, 215 t/a *Bacillus thuringiensis* DP, 300 t/a lambda-cyhalothrin, 300 t/a petroleum oil and 380 t/a emamectin benzoate·beta-cypermethrin.

### 3 Details of China's on-going pesticide projects by product type

#### 3.1 Projects involving pesticide technical only

In Q1–Q3 2023, Chinese pesticide enterprises had continued to cultivate high-quality projects in their sectors and beefed up capacity development for products in short supply. In this connection, multiple thousand-tonne projects were invested and constructed in a row, including 31 technical-only projects, which accounted for 33.7% of the total 92 projects in the period, with following regional distribution:

- 16 in East China;
- 6 in North China, of which the construction scale larger than technical projects in other regions;
- 4 in Northwestern China;
- 2 in Central China;
- 3 in Northeastern China, the Southwestern China and overseas, respectively.

Table 3.1-1 31 Projects for pesticide technical only, Q1–Q3 2023

No.	Enterprise name	Project name	Concerning products	New capacity, t/a	Total capacity, t/a	Status
1	Sichuan Hebang Biotechnology Co., Ltd.	Chemical Production Base Construction Project in Surabaya, East Java, Surabaya	Glyphosate	200,000	200,000	Planning
2	Inner Mongolia Miraculous Crop Science Co., Ltd.	80,000 t/a Mancozeb Project	Mancozeb	80,000	80,000	Planning
3		30,000 t/a Clethodim Project	Clethodim	30,000	30,000	Planning
4	Shandong Cynda Chemical Co., Ltd.	5,000 t/a Clethodim Technical Project	Clethodim	5,000	5,000	Planning
5	Gansu Xinlianrun Biotechnology Co., Ltd.	1,200 t/a Pesticide Technical Production Line Construction Project	Tebuthiuron	1,000	1,200	Planning
			Florasulam	200		
6	Changqing (Hubei) Bio-tech Co., Ltd.	1,000 t/a Chlorantraniliprole Project	Chlorantraniliprole	1,000	1,000	Planning
7	Hebei Nongbiwei Biotechnology Co., Ltd.	33,100 t/a Green Pesticide Technical and By-product Project	Glufosinate-Ammonium	10,000	33,100	In EIA process
			Clethodim	6,300		
			Tebuthiuron	5,400		
			Mesotrione	3,000		
			Nicosulfuron	2,000		
			Imazapyr	1,800		
			Fenclorim	1,200		
			Quizalofop-P-Ethyl	1,000		
8	Shandong Eshung Industrial Co., Ltd.	35,000 t/a Glufosinate-Ammonium Reconstruction and Expansion and 10,000 t/a Insecticide Series Product Construction Project	Glufosinate-Ammonium	14,000	45,000	In EIA process
			Chlorantraniliprole	5,000		
			Cyantraniliprole	5,000		
9	Jiangxi Oushi Chemical Co., Ltd.	2,000 t/a Lufenuron and 1,000 t/a Dinotefuran Construction Project and 2,000 t/a Picoxystrobin and 10,000 t/a Thiamethoxam Construction Project	Picoxystrobin	2,000	15,000	In EIA process
			Thiamethoxam	10,000		
			Lufenuron	2,000		
			Dinotefuran	1,000		
10	Anhui Red Sun Biochemical Co., Ltd.	10,000 t/a (2S)-2-amino-4-[hydroxy(methyl)phosphoryl]butanoic Acid	Glufosinate-p	10,000	10,000	In EIA process
11	Huaibei Longxi Biotechnology Co., Ltd.	3,000 t/a Fine Chemical Product Project	Fludioxonil	1,000	3,000	In EIA process
			Fonicamid	1,000		
			Indoxacarb	1,000		
12	Ningxia Gerui Fine Chemical Co., Ltd.	6,000 t/a Brand New Green Continuous Process MCPA-isooctyl Project	MCPA-Isocetyl	6,000	6,000	In EIA process
13	CAC Nantong Chemical Co., Ltd.	5,000 t/a Azoxystrobin Technical and By-product Technological Renovation Project	Azoxystrobin	0	5,000	In EIA process
14	Gansu Beida	4,600 t/a Pesticide Technical	Difenoconazole	4,000	4,600	In EIA



No.	Enterprise name	Project name	Concerning products	New capacity, t/a	Total capacity, t/a	Status
	Biotechnology Co., Ltd.	Production Line Construction Project	Zoxamide	600		process
15	Zhejiang Avilive Chemical Co., Ltd.	500 t/a Aminopyralid, 700 t/a Clopyralid, 1,000 t/a Picloram and 500 t/a Chlorantraniliprole Production Line Construction Project	Aminopyralid	500	2,700	In EIA process
			Clopyralid	700		
			Picloram	1,000		
			Chlorantraniliprole	500		
16	Zhejiang Udragon Chemical Co., Ltd.	2,050 t/a Chemical Pesticide Technical Renovation Project	Prothioconazole	600	2,050	In EIA process
			Fludioxonil	250		
			Metconazole	200		
			Cyproconazole	200		
			Zoxamide	200		
			Ipconazole	50		
			Famoxadone	50		
			Spirobudiclofen	50		
			Benzisothiazolinone	50		
			MPPZ	200		
			Thiorantraniliprole	200		
17	Anhui Jiuyi Agriculture Co., Ltd.	1,200 t/a Intellectual Synthetic Pesticide Technical Technological Renovation Project	Pyroxasulfone	600	1,200	In EIA process
			Tembotrione	600		
18	Jiangxi Huihe Chemical Co., Ltd.	4,000 t/a Prochloraz Automation Transformation Project (Phase I)	Prochloraz	1,000	1,000	In EIA process
19	Inner Mongolia Miraculous Crop Science Co., Ltd.	20,000 t/a Chlorantraniliprole Project (Phase I)	Chlorantraniliprole	20,000	20,000	EI report approved
20	Weifang Nuchlor Chemical Co., Ltd.	2,000 t/a Fluroxypyr Technological Renovation Project	Fluchloraminopyr	1,300	3,300	EI report approved
			Fluroxypyr	0		
21	Shenyang Liansheng Chemical Industry Co., Ltd.	Agro-herbicide Acetochlor Technical (Methylene Method), Butachlor Technical (Methylene Method) and Tebuconazole Technical Project	Tebuconazole	700	10,700	EI report approved
			Acetochlor	8,000		
			Butachlor	2,000		
22	Jiangxi Lianbai Technology Co., Ltd.	1,500 t/a Azoxystrobin and 1,500 t/a Chlorfenapyr Technology Renovation Project	Azoxystrobin	1,500	3,000	EI report approved
			Chlorfenapyr	1,500		
23	Jiangsu Chunjiang Runtian Agrochemical Co., Ltd.	Part Lambda-cyhalothrin Product Technological Transformation Co., Ltd.	Lambda-Cyhalothrin	2,600	3,000	EI report approved
			Fenvalerate	400		
24	Hebei Derui Chemical Co., Ltd.	3,000 t/a Thiamethoxam Technology Renovation Project	Thiamethoxam	2,000	2,000	EI report approved
25	Lanzhou Xinlongtai Biotechnology Co., Ltd.	6,000 t/a Pymetrozine and By-product Construction Project (Phase II)	Pymetrozine	2,000	6,000	EI report approved
26	Hebei Veyong Bio-Chemical Co., Ltd.	Emamectin Benzoate, Pymetrozine and Other Pesticide Products and Sewage Plant Technological Transformation Project	Emamectin benzoate	200	400	EI report approved
			Pymetrozine	200		
			Glufosinate-Ammonium	0		
27	Jingzhou Sancaitang Chemical Technology Co., Ltd.	10,000 t/a Biochemical Method Glufosinate-P Project	Glufosinate-P	10,000	10,000	Under construction
28	Qilu Pharmaceutical Co., Ltd.	2,000 t/a Emamectin Benzoate Transformation and Upgrading Project	Emamectin Benzoate	2,000	2,000	Production
29	Yongnong BioSciences Co., Ltd.	8,000 t/a High-efficiency Pesticide Technical Technological Renovation Project	Glufosinate-P	3,000	8,000	Partial Production
			Chlorfenapyr	2,500		
			Bifenazate	1,200		
			Prochloraz-Manganese chloride complex	500		
			Thiamethoxam	200		
			Pyraclostrobin	200		
			Epoxiconazole	200		
			Azoxystrobin	100		
Dicamba	100					

No.	Enterprise name	Project name	Concerning products	New capacity, t/a	Total capacity, t/a	Status
30	Hunan Lier Biotech Co., Ltd.	Hunan Jinshi 20,000 t/a Enzymatic Method Glufosinate-P Project	Glufosinate-P	20,000	20,000	Trial production
31	Chongqing Huage Biochemical Co., Ltd.	2,000 t/a Chlorantraniliprole Project	Chlorantraniliprole	2,000	2,000	Production

Note: EIA refers to environmental impact assessment; EI report refers to environmental impact report; Projects under the status of planning include but not limit to those under IPO planning, government record or agreement establishment; New capacities for projects in Phase II are based on those constructed in Phase II, others are based on total new capacities.

Source: CCM

### 3.2 Projects involving intermediates only or pesticide technical & intermediates

In China, agrochemical enterprises are urgently intensifying industrial layout for key supporting intermediates, attempting to further enhance the industrial chain integration for the company's pivotal products. Among the 92 planned or constructed pesticide projects during Q1–Q3, a total of 46 projects with a capacity of 932,620 t/a were designed for intermediates only (22,=609,070 t/a) or a combination of pesticide & intermediates (24,=323,550 t/a). Thereinto, 660,000 t/a (=70.8%) is located in the Northwestern China.

Table 3.2-1 22 Projects for pesticide intermediates only, Q1–Q3 2023

No.	Name of Enterprise	Project name	New capacity	Status	Category of concerning TC products
1	Gansu Xinlianrun Biotechnology Co., Ltd.	114,800 t/a Pesticide and Pharmaceutical Intermediate Production Line Construction Project	114,800	Planning	Fungicide
2	Inner Mongolia Daoke Chemical Co., Ltd.	20,000 t/a Novel Low-toxicity and High-efficiency Pesticide Intermediate Project	20,000	Planning	Herbicide and insecticide
3	Hebei Shuangji Chemical Co., Ltd.	600 t/a 2-Chloro-4-methanesulfonyl-3-[(2,2,2-trifluoroethoxy)methyl]benzoic Acid Project	600	Planning	Herbicide
4	Hubei Fengshan New Material Technology Co., Ltd.	24,500 t/a 4-Chlorotoluene and Other Fine Chemical Product Construction Project	24,500	Planning IPO	Herbicide
5	Ningxia Xinrun Chuantai Material Co., Ltd.	120,000 t/a Dimethyl sulfate Project	120,000	In EIA process	Herbicide, insecticide and fungicide
6	Ningxia Beilite Biotechnology Co., Ltd.	102,000 t/a Cyanamide Downstream Guanidyl Product Construction Project	102,000	In EIA process	Insecticide
7	Lanzhou Senyang Longtai Chemical Co., Ltd.	70,000 t/a Pesticide Intermediate and By-product Construction Project	70,000	In EIA process	Insecticide
8	Gansu Yongrun Tianze Technology Co., Ltd.	39,800 t/a Pharmaceutical and Pesticide Intermediate Project	39,800	In EIA process	Fungicide and insecticide
9	Hubei Shengkang Chemical Co., Ltd.	25,458 t/a Special New Material Construction Project (Phase I Program for 3,5-Dimethylbenzoic Acid and 2-Amino-5-chloro-3-methylbenzoic Acid)	25,458	In EIA process	Insecticide
10	Wuwei Jieda Technology Co., Ltd.	8,000 t/a CCMP Technological Renovation Project	0	In EIA process	Insecticide
11	Shandong Kunda Biotechnology Co., Ltd.	5,000 t/a 2,3-Dichloropyridine Expansion Project	5,000	In EIA process	Insecticide
12	Gansu Youxing Chemical Co., Ltd.	4,000 t/a Methylthioacetaldoxime Project	4,000	In EIA process	Insecticide
13	Anhui Hengke Chemical Co., Ltd.	2,000 t/a 3-Bromo-1-(3-chloropyridin-2-yl)-1H-pyrazole-5-carboxylic Acid, 600 t/a Methyl 2-Amino-3-methylbenzoate and 500 t/a Bardoxolone Technological Renovation Project	3,600	In EIA process	Insecticide

No.	Name of Enterprise	Project name	New capacity	Status	Category of concerning TC products
14	Inner Mongolia Yongtai Chemical Co., Ltd.	2,000 t/a DFPA Technological Renovation Project	0	In EIA process	Herbicide
15	Jiangxi Tianyu Chemical Co., Ltd.	200 t/a Cyclopropanecarboxaldehyde and Other Dedicated Intermediate Project	1,900	In EIA process	Insecticide
16	Hubei Zhongxun Thinkgreen Technology Co., Ltd.	600 t/a 3,4-Difluorobenzonitrile Production Project	600	In EIA process	Herbicide
17	Jiangsu Lianhe Chemical Technology Co., Ltd.	600 t/a NE128 (Chloropramic Acid) Technological Renovation Construction Project	600	In EIA process	Others
18	Zhejiang Heyusheng Chemical Co., Ltd.	High-end Special Chemical Intelligent Manufacturing Construction Project	37,000	EI report approved	Fungicide
19	Guangxi Liwei New Material Technology Co., Ltd.	30,000 t/a High-efficiency and Low-toxicity Pesticide and Pesticide and Pharmaceutical Intermediate Project (Phase I)	30,000	EI report approved	Insecticide
20	Ningxia Nongjia New Material Technology Co., Ltd.	6,000 t/a Ethyl N-cyanoethanimideate Construction Project	6,000	EI report approved	Insecticide
21	Jilin Pingji Industry and Trade Co., Ltd.	2,500 t/a Pesticide Intermediate Project (Phase I)	2,500	EI report approved	Herbicide
22	Jiangxi Huidong Pharmaceutical Technology Co., Ltd.	High-efficiency, Safe and Environmental-friendly Pharmaceutical and Pesticide Intermediate Project	712	EI report approved	Insecticide and fungicide

Note: EIA refers to environmental impact assessment; EI report refers to environmental impact report; Projects under the status of planning include but not limit to those under IPO planning, government record or agreement establishment; New capacities for projects in Phase II are based on those constructed in Phase II, others are based on total new capacities.

Source: CCM

Table 3.2-2 24 Projects for pesticide technical and intermediates, Q1–Q3 2023

No.	Name of Enterprise	Project name	New capacity	Status	Category of concerning products
1	Borui Tiansheng (Xinjiang) Biotechnology Co., Ltd.	Pesticide and Intermediate Project	13,400	Planning	Insecticide and herbicide
2	Shaanxi Nuozheng Biotechnology Co., Ltd.	20,000 t/a Pesticide Technical and Intermediate Production Line Construction Project	20,000	In EIA process	Insecticide and fungicide
3	Gansu Pingwen Chemical Co., Ltd.	10,300 t/a Pesticide Technical and 9,000 t/a Intermediate Project	19,300	In EIA process	Fungicide and Herbicide
4	Weifang Maoyuan Biotechnology Co., Ltd.	6,000 t/a Thiamethoxam and 10,000 t/a CCMT Project	16,000	In EIA process	Insecticide
5	Gansu Jinse Runsheng Chemical Co., Ltd.	15,200 t/a Pesticide Technical and Intermediate Project	15,200	In EIA process	Insecticide
6	Shandong United Pesticide Industry Co., Ltd.	10,000 t/a CCMP and 5,000 t/a Acetamiprid Technical Construction Project	18,000	In EIA process	Insecticide
7	Qingdao Hengning Biotechnology Co., Ltd.	Green and High-efficiency Agricultural Technical Material and Intermediate Project	49,200	In EIA process	Fungicide
8	Gansu Wei'ersheng Pharmaceutical Co., Ltd.	8,000 t/a Pesticide Technical, Pesticide Intermediate and Pharmaceutical Intermediate Production Project (Phase I)	8,000	In EIA process	Insecticide

No.	Name of Enterprise	Project name	New capacity	Status	Category of concerning products
9	Gansu Jinghong Intelligent Manufacturing New Technology Co., Ltd.	2,000 t/a Prothioconazole and 4,000 t/a 2-Chloro-1-(1-chlorocyclopropyl)ethanone Production Line Construction Project	6,000	In EIA process	Fungicide
10	Fuxin Tianli Fine Chemical Co., Ltd.	4,000 t/a Pesticide and Pharmaceutical Intermediate Fine Chemical Project	4,000	In EIA process	Fungicide and Herbicide
11	Jiangxi Meijing Technology Co., Ltd.	2,750 t/a Intermediate Project for 600 t/a Lipoic Acid, 500 t/a Flumioxazin and Others	2,750	In EIA process	Herbicide
12	Lanzhou Yinxue Chemical Co., Ltd.	2,000 t/a Pesticide Technical and Intermediate Project Change	1,300	In EIA process	Insecticide and fungicide
13	Inner Mongolia Yongtai Chemical Co., Ltd.	200 t/a 1,2-Difluorobenzene, 500 t/a Prothioconazole Technical and 500 t/a Chlorantraniliprole Technical Project	1,200	In EIA process	Insecticide and fungicide
14	Jiangsu Jiannong Plant Protection Co., Ltd.	6,750 t/a Environmental Protection and Safety Rectification and Transformation Project	0	In EIA process	Fungicide
15	Gansu Binong Technology Co., Ltd.	22,000 t/a Pesticide and Intermediate Project	22,000	EI report approved	Herbicide
16	Hubei Jinghesheng Biotechnology Co., Ltd.	13,600 t/a Pesticide Technical and Intermediate Project	13,600	EI report approved	Insecticide
17	Gansu Zhongmaotou Chemical Co., Ltd.	12,000 t/a Fine Chemical and Pesticide Technical Project (Phase I&II)	12,000	EI report approved	Insecticide
18	Gansu Hanlong Chemical Co., Ltd.	Pesticide Intermediate and Technical Production Line (Phase II)	10,000	EI report approved	Insecticide and fungicide
19	Lanzhou Zhaofeng Chemical Technology Co., Ltd.	500 t/a Tralopyril and 400 t/a 2-Chloroacrylonitrile Project (Phase II Program 1,200 t/a Chlorfenapyr and Supporting Intermediate)	2,700	EI report approved	Insecticide
20	Gansu Xinhengmao Technology Co., Ltd.	Chlorophenol Production Base Project (Phase I)	73,500	Under construction	Herbicide and fungicide
21	Inner Mongolia Laike Crop Protection Co., Ltd.	7,200 t/a Fine Chemical Product Construction Project	7,200	Under construction	Insecticide
22	Anhui Huilong RMF Bioengineering Co., Ltd.	2,000 t/a Chlorantraniliprole Technical and Intermediate Project	2,000	Under construction	Insecticide
23	Liaoning Cynda Agricultural Science Co., Ltd.	1,000 t/a Imazapyr and 3,000 t/a Pesticide Intermediate Project	4,000	Trial production	Herbicide
24	Hebi Baoruide Chemical Co., Ltd.	2,200 t/a Chemical Reconstruction Project	2,200	Trial production	Fungicide

Note: EIA refers to environmental impact assessment; EI report refers to environmental impact report; Projects under the status of planning include but not limit to those under IPO planning, government record or agreement establishment; New capacities for projects in Phase II are based on those constructed in Phase II, others are based on total new capacities.  
Source: CCM

### 3.3 Projects involving pesticide formulations

In Q1–Q3 2023, there were 15 projects involving pesticide formulations among the 92 pesticide projects planned or in construction progress, in relation to construction of 618,134 t/a capacities of pesticide technical, formulations and intermediates.

Table 3.3-1 15 Pesticide projects concerning formulations, Q1–Q3 2023

No.	Name of Enterprise	Project name	New capacity	Status	Type
1	Baicao Yuan Biology Co., Ltd.	High-efficiency Environment-friendly Pesticide Construction Project	252,000	Planning	Pesticide technical, formulations & intermediates
2	Hebei Shanli Technology and Chemical Co., Ltd.	210,000 t/a Green Agrochemical Project	210,000	In EIA process	Formulations
3	Jiangsu Changqing Agrochemical (Nantong) Co., Ltd.	16,000 t/a Pesticide Formulation Project	16,000	In EIA process	Formulations
4	Shandong Lukang Biological Pesticides Co., Ltd.	Bio-pesticide Base Construction Project	14,180	In EIA process	Pesticide technical & formulations
5	Gansu Qinye Chemical Co., Ltd.	12,000 t/a Fine Chemical Production Line Reconstruction Project (Phase I)	12,000	In EIA process	Pesticide technical & formulations
6	Hebei Nongxin Biotechnology Co., Ltd.	7,700 t/a Lambda-cyhalothrin Formulation and 2,000 t/a Lambda-cyhalothrin Technical Production Base Construction Project	9,700	In EIA process	Pesticide technical & formulations
7	MAX (Rudong) Chemicals Co., Ltd.	9,200 t/a High-efficiency and Environmental-friendly Pesticide Formulation Processing and Renovation Project	6,150	In EIA process	Formulations
8	Jiangsu Chunjiang Runtian Agrochemical Co., Ltd.	Glufosinate-ammonium Expansion and Technological Transformation Project	6,000	In EIA process	Pesticide technical & formulations
9	Jiangsu Jiannong Plant Protection Co., Ltd.	500 t/a Fluazaindolizine Technical Renovation Project	900	In EIA process	Pesticide technical & formulations
10	Jiangsu Corechem Co., Ltd.	12,000 t/a Pesticide Formulation Technological Renovation Project	12,000	EI report approved	Formulations
11	Shandong Lukang Biological Pesticides Co., Ltd.	Pesticide Formulation Expanding and Upgrading Project	2,700	EI report approved	Formulations
12	Gansu West Xinyu Chemical Co., Ltd.	15,000 t/a Pesticide Technical, Formulation and Intermediate Construction Project	15,000	Production	Pesticide technical, formulations & intermediates
13	Jiangshan (Yichang) Crop Technology Co., Ltd.	Novel Innovative Green Herbicide Technical and Formulation Project	30,000	Under construction	Pesticide technical & formulations
14	Hebei Lansen Biotechnology Co., Ltd.	25,005 t/a High-efficiency and Low-toxicity Pesticide Expansion Project	20,504	EI report approved	Pesticide technical & formulations
15	Hebei Veyong Bio-Chemical Co., Ltd.	1,000 t/a Glufosinate-Ammonium Technological Renovation and 10,000 t/a Glufosinate-P Construction Project (Phase I)	11,000	EI report approved	Pesticide technical & formulations

Note: EIA refers to environmental impact assessment; EI report refers to environmental impact report; Projects under the status of planning include but not limit to those under IPO planning, government record or agreement establishment; New capacities for projects in Phase II are based on those constructed in Phase II, others are based on total new capacities.

Source: CCM

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