

# Fungicides China News

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## Headline

The Jiangsu Pesticide Research Institute plans to vigorously promote three independently developed phenamacril fungicides. Notably, revenue from the company's phenamacril fungicides achieved over USD10.71 million (RMB70 million). The fungicide, under heavy promotion, is hopeful to earn "RMB100 million" in 2016.

According to CCM's market monitoring, China's market price of chlorothalonil technical increased due to short supply in the first half of March. However, as the peak season comes, the plants have almost been fully booked, and are likely to pull up the price. In 2016, the price of chlorothalonil is expected to keep high as last year and even go up.

On 8 March, 2016, the list of China's top 20 pesticide exporters (by manufacturer) in 2015 were unveiled at the CAC2016. This also showed the general situation and highlights about China's exports of pesticides in 2015.

According to CCM's research, although some plants suspended production under environmental protection pressure, increasing number of carbendazim plants resumed production and most leading producers are capable of supply. In the short term, China's market price of carbendazim technical is expected to rise as the orders increase. On the whole, it will remain stable in full-year 2016.

At the end of Feb. 2016, IPP, CAAS signed with ALS a distribution licensing agreement, granting it exclusive global access to "Atailing", China's first plant immunoprotein biopesticide. Through cooperation with international pesticide enterprise, this biopesticide is expected to be promoted around the world. Also the success of it will set a good example of internationalization of Chinese technology and open a new chapter for multinational cooperation.

Limin Chemical plans to make a private placement for its high-efficient pesticide projects, basic raw material projects and replenishment in liquid capital. This will assist the company to further expand business and improve profitability, which improves its comprehensive competitiveness and carries forward the strategic goals.

In full-year 2015, both export volume and average export price of tebuconazole technical decreased, down by 2.93% and 10.14% YoY respectively, according to China Customs and CCM's analysts.

In 2015, China's export volume and export value of fungicide formulations both increased YoY, but the rise of the value was much smaller than that of the volume, affected by the downturn of pesticide market.

In Q4 2015, China's import volume of fungicide formulations continued declining by a larger percentage, following the decreases in the previous three quarters. In total, the import volume of fungicide formulations fell by 22.09% YoY in 2015.

In Feb. 2016, 15 new registrations of fungicide technical (excluding renewal of registrations), including 12 active ingredients, were approved in China, according to the Institute for the Control of Agrochemicals, Ministry of Agriculture.



## Editor's Note

In March 2016, eyes of most Chinese pesticide manufacturers were caught by the CAC2016 and the CAC conference week. At the conference, Zhang Wenjun, director of ICSD, ICAMA, introduced China's exports of pesticides in 2015 and pointed out that it was the first time to see downturns in both imports and exports of pesticides over the past 5 years. Specifically:

### Export

- Volume: 1.51 million tonnes, down by 8.06% YoY
- Value: USD7.28 billion, down by 16.87% YoY

### Import

- Volume: 57,600 tonnes, down by 14.21% YoY
- Value: USD678 million, down by 8.88% YoY

Moreover, the list of China's top 20 pesticide exporters in 2015 were unveiled at CAC2016, which demonstrated the manufacturers' ability and achievements in expanding overseas market, as well as their excellent quality of pesticides and capability of supply. This also helped to further these companies' influence.

Notably, there were still some highlights in the overall pesticide export market.

According to Zhang Wenjun, since 2011, exports of technical have decreased year by year, while more high value-added formulations have been exported and become a new driving force. This manifests China's successful structure adjustment in the pesticide industry.

China's export volume and value of fungicide formulations both increased over 2014, according to China Customs and analysts CCM. However, due to the downturn in the overall pesticide market, the rise in value was much smaller than that in volume.

CCM has made detailed analysis on China's exports and imports of fungicide formulations and the top 20 pesticide exporters in following report.

The USD/RMB exchange rate in this report is USD1.00=RMB6.5385 on 1 March 2016, sourced from the People's Bank of China. All the prices mentioned in this report will include the VAT, unless otherwise specified.

## Market Dynamics

### Phenamacril, another independently developed fungicide to make sales of "RMB100 million"

Summary: The Jiangsu Pesticide Research Institute plans to vigorously promote three independently developed phenamacril fungicides. Notably, revenue from the company's phenamacril fungicides achieved over USD10.71 million (RMB70 million). The fungicide, under heavy promotion, is hopeful to earn "RMB100 million" in 2016.

On 25 Feb., 2016, at the 19th Jiangsu Pesticide and Machinery Information Technology Exchange Meeting, Cao Yang, general manager of the Jiangsu Pesticide Research Institute Co., Ltd. (Jiangsu Pesticide Research Institute), introduced their ten major pesticides that will be promoted in 2016, including three independently developed phenamacril fungicides. Notably, revenue from the company's phenamacril fungicides achieved over USD10.71 million (RMB70 million). The fungicide, under heavy promotion, is hopeful to earn "RMB100 million" in 2016.

In 2016, the Jiangsu Pesticide Research Institute will mainly promote the following three fungicides:

- 25% Phenamacril SC (Jinhu<sup>®</sup>)

- Type of formulation: single formulation
- Feature: performance more reliable in preventing and controlling serious wheat head blight, more excellent in regions with high resistance against carbendazim and triazole fungicides
- Its sales ranked No.3 among fungicides for crop protection

- 25% Phenamacril SC (Liangdi<sup>®</sup>)

- Type of formulation: single formulation (high purity technical with safener)
- Feature: targeted at rice bakanae disease, safe to rice
- Usage: seed soaking

- 48% Phenamacril + tebuconazole SC (Jinxing<sup>®</sup>)

- Type of formulation: mixed formulation
- Feature: broad-spectrum, especially for wheat head blight, powdery mildew and rust

"Phenamacril is a cyanoacrylate fungicide developed by Jiangsu Pesticide Research Institute in 1998. It has special chemical structure and stands out among so many other pesticides," an insider said. Different from mainstream fungicides that are broad-spectrum, phenamacril focuses on controlling wheat head blight and rice bakanae disease. So far, this kind of fungicide has been granted one patent for invention and five patents for application.

Besides, Jiangsu Pesticides Research Institute began field trials on phenamacril in 2001.

In 2005 and 2006, the company commissioned several institutes to do field trials on the efficacy of 25% phenamacril SC against wheat head blight. The institutes include: the Jiangsu Institute for the Control of Agrochemicals, the Hunan Institute for the Control of Agrochemicals, the Institute of Soil Fertilizer, Hubei Academy of Agricultural Sciences (ISF, HAAS) and the Institute of Plant



Protection, Anhui Academy of Agricultural Sciences.

In 2008 and 2009, field trials on the efficacy of 25% phenamacril SC against rice bakanae disease were commissioned to the Jiangsu South Pesticide Research Center, the Heilongjiang Institute for the Control of Agrochemicals, the ISF, HAAS and the Hunan Institute of Plant Protection.

In the coming future, Jiangsu Pesticides Research Institute will further develop phenamacril's potential in controlling diseases, such as fusarium wilt, and register more relevant fungicides.

Notably, wheat head blight's resistance to carbendazim has increased due to the long-term, continuous and only use in recent years. Thus a new fungicide to replace and reduce the use of carbendazim is in great need. Despite various pesticides for wheat head blight in the market, mainly benzimidazole, phenamacril, prochloraz and triazole fungicides, phenamacril stands out because of its good efficacy, significantly low toxins and improvement in crop quality and output. Also, phenamacril has effective control over rice bakanae disease.

Thanks to these advantages, phenamacril will be an important alternative fungicide for wheat head blight and rice bakanae disease. Now phenamacril fungicides have been recommended and purchased by local departments of agriculture.

In 2016, with great strengths, phenamacril fungicides are expected to boost in sales under the vigorous promotion of Jiangsu Pesticide Research Institute and become another independently developed fungicide with full-year sales of "RMB100 million".

### **Market price of chlorothalonil to keep high in 2016**

Summary: According to CCM's market monitoring, China's market price of chlorothalonil technical increased due to short supply in the first half of March. However, as the peak season comes, the plants have almost been fully booked, and are likely to pull up the price. In 2016, the price of chlorothalonil is expected to keep high as last year and even go up.

According to CCM's market monitoring, China's market price of chlorothalonil technical increased due to short supply in the first half of March. However, as the peak season comes, the plants have almost been fully booked, and are likely to pull up the price. In 2016, the price of chlorothalonil is expected to keep high as last year and even go up.

China's chlorothalonil technical is in short supply but the demand is increasing at present. Moreover, some plants suspended production, which further tightened the supply. According to CCM's research:

CAC (Group) Co., Ltd.: chlorothalonil technical production facility operates normally. Quotation for 98% chlorothalonil TC was USD5,353/t – RMB35,000/t (negotiable in transaction), and USD4,971/t (RMB32,500/t) for regular clients. However, its orders have been fully booked and cannot receive order in short term.

Limin Chemical Co., Ltd.: no inventory as well as no quotation for chlorothalonil technical and not able to receive orders.

Jiangsu Weunite Fine Chemical Co., Ltd. (Jiangsu Weunite): chlorothalonil technical production isn't stable. Its orders have been fully booked and cannot receive order. Quotation for chlorothalonil hasn't been offered.

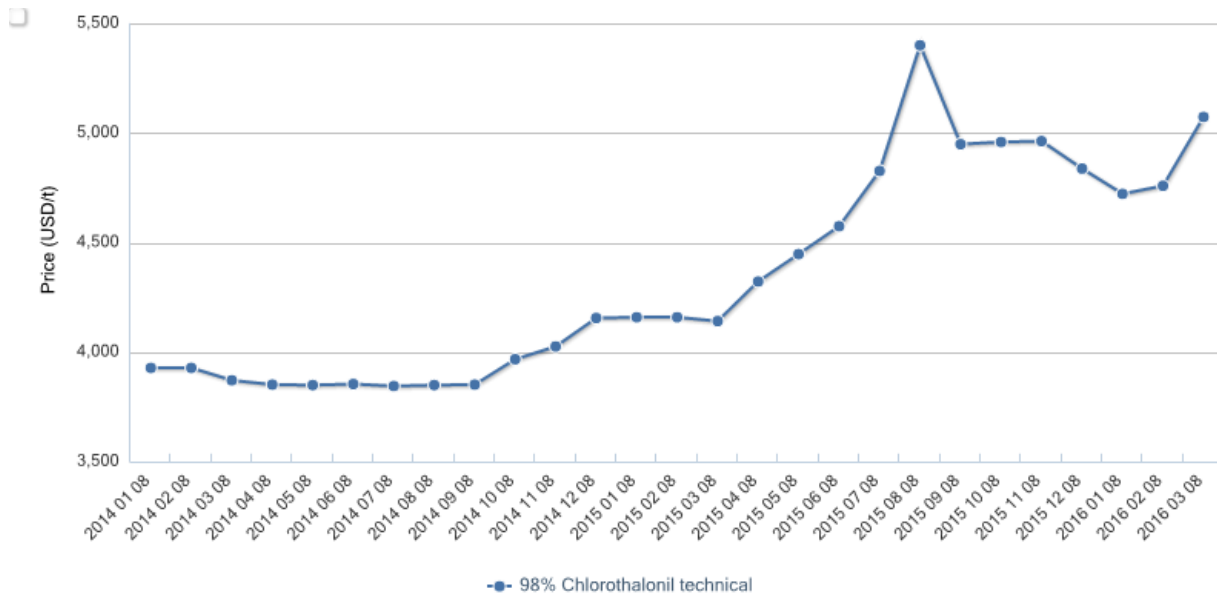
Shandong Dacheng Pesticide Co., Ltd.: its plant for chlorothalonil technical suspended production for maintenance and has no inventory so far.



Jiangyin Suli Fine Chemical Co., Ltd. (Jiangyin Suli): chlorothalonil technical production facility is in normal operation (capacity: 14,000 t/a) and its inventory is running short.

Notably, Jiangsu Weunite's plant went on fire due to the leakage of heat transfer oil on 18 Feb., 2016. This influenced Jiangsu Weunite's production and may further the shortage in chlorothalonil supply, which is likely to push the market price to rise.

Figure 1: Ex-works price of 98% chlorothalonil technical in China, Jan. 2014-March 2016



Source: CCM

In 2015, despite the downturn in the overall pesticide market, market price of chlorothalonil technical rose and kept high. This was mainly caused by its tight supply.

Although operating rate of leading manufacturers were high and even most manufacturers produced at full capacity this year, the tight supply in chlorothalonil market wasn't eased. Increasing foreign orders and low chlorothalonil inventory were the vital reasons.

According to some insiders, as overseas producers reduced supply in chlorothalonil, many foreign enterprises turned to domestic suppliers, which increased the orders in 2015. The increasing demand tightened the supply in domestic market and thus pulled up the market price of chlorothalonil.

Moreover, most manufacturers didn't stock chlorothalonil in large quantity, as it isn't a bulk product. Therefore, when the demand for chlorothalonil exceeded manufacturers' prediction, their inventory dropped rapidly, which made chlorothalonil in short supply.

In fact, since H2 2014, China's supply in chlorothalonil has become relatively tight and the market price has increased slightly.

According to CCM's research, so far, China's capacity of chlorothalonil technical has achieved 30,000 t/a. Specifically:

- Jiangyin Suli: capacity: 14,000 t/a; output: 9,000-10,000 t/a, 50%+ of the total market supply
- Jiangsu Xinhe Agrochemical Co., Ltd.: capacity: 8,000 t/a
- Jiangsu Weunite: capacity: 2,000 t/a

Additionally, no new plant or production line have been constructed in the past two years.

At present, China's chlorothalonil were mainly exported, while domestic demand is quite small (<50% used in pesticides). On 8 March, 2016, at the 10<sup>th</sup> China International Forum on Development of Pesticide Industry, Zhangwenjun, director of International Cooperation Service Department of the Institute for the Control of Agrochemicals, Ministry of Agriculture, introduced China's exports of chlorothalonil (technical + formulations) in 2015:

- Volume: up by 13.45% YoY
- Value: USD100 million, up by 19.38% YoY
- Ranking No.1 among the top 10 pesticides by export value

Table 1: Selected producers' capacity of chlorothalonil technical in China

No.	Enterprise	Capacity, t/a
1	Jiangyin Suli Fine Chemical Co., Ltd.	14,000
2	Jiangsu Xinhe Agrochemical Co., Ltd.	8,000
3	Shandong Dacheng Pesticide Co., Ltd.	4,000
4	Jiangsu Weunite Fine Chemical Co., Ltd.	2,000
5	Hunan Nantian Industry Stock Co., Ltd.	1,000
6	Qinnong Chemtech (Shanghai) Co., Ltd.	500

Source: China Crop Protection Industry Association

## China's top 20 pesticide exporters in 2015

Summary: On 8 March, 2016, the list of China's top 20 pesticide exporters (by manufacturer) in 2015 were unveiled at the CAC2016. This also showed the general situation and highlights about China's exports of pesticides in 2015.

On 8 March, the list of China's top 20 pesticide exporters (by manufacturer) in 2015 were unveiled the 17<sup>th</sup> China International Agrochemical & Crop Protection Equipment Exhibition (CAC2016) in Shanghai.

"These self-run exporters ranked by export volume and export value (USD) in line with data from China Customs. After review from the Institute for the Control of Agrochemicals, Ministry of Agriculture (ICAMA), the final top 20 came out. This top 20 selection manifests the manufacturers' ability and achievements in expanding overseas market, as well as their excellent quality of pesticides and capability of supply," said Ma Yanchun, vice chairman of China Council for the Promotion and of International Trade Sub-council of Chemical Industry (CCPIT CHEM).

This selection also showed the general situation and highlights about China's exports of pesticides in 2015.



Table 2: China's top 20 pesticide exporters (by manufacturer), 2015

No.	Enterprise
1	Beijing Nutrichem Biotechnology Co., Ltd.
2	Shandong Weifang Rainbow Chemical Co., Ltd.
3	Fuhua Tongda Agro-chemical Technology Co., Ltd.
4	Zhejiang Wynca Chemical Group Co., Ltd.
5	Jiangsu Yangnong Chemical Co., Ltd.
6	Nanjing Redsun Co., Ltd.
7	Tide Group
8	Hubei Sanonda Co., Ltd.
9	Nantong Jiangshan Agrochemical & Chemical Co., Ltd.
10	Sinochem International Crop Care Company Limited
11	Ninghua Group Co., Ltd.
12	Ningbo Generic Chemical Co., Ltd.
13	Changzhou Eastchem International Co., Ltd.
14	Jiangsu Sevencontinent Green Chemical Co., Ltd.
15	Jiangsu Good Harvest Weien Agrochemical Co., Ltd.
16	Jiangsu Trustchem Co., Ltd.
17	Jiangsu Flag Chemical Industry Co., Ltd.
18	Jiangsu Huifeng Agrochemical Co., Ltd.
19	Shangyu Yongnong Chem. Ind. Co., Ltd.
20	Zhejiang Zhongshan Chemical Industry Group Co., Ltd.

Source: CAC

### Export value: high concentration but fall to different degrees

"The total export value of the 38 applicants for this top 20 selection was USD5.49 billion, of which that of the 33 enterprises reached USD5.32 billion (each >USD50 million), and the top 20 USD4.30 billion (= 78.3% of the total). On the whole, China's exports of pesticides were of high concentration," said Fan Liqiang, deputy director of CCPIT CHEM.

Fan Liqiang also mentioned, "This was the first top 20 selection. Compared with the top 10 in 2014, the total sales of the top 10 this year fell sharply."

According to data from CAC2016, the cumulative export value of the top 10 exporters in 2015 achieved USD2.96 billion, down by 13% over USD3.40 billion in 2014. Except Shandong Weifang Rainbow Chemical Co., Ltd. (Weifang Rainbow), sales of the other nine companies all declined to different degrees in 2015, 40% for the highest.

Table 3: China's top 10 pesticide exporters (by manufacturer), 2014

No.	Enterprise
1	Beijing Nutrichem Biotechnology Co., Ltd.
2	Zhejiang Wynca Chemical Group Co., Ltd.
3	Shandong Weifang Rainbow Chemical Co., Ltd.
4	Fuhua Tongda Agro-chemical Technology Co., Ltd.
5	Jiangsu Yangnong Chemical Co., Ltd.
6	Hubei Sanonda Co., Ltd.
7	Nanjing Redsun Co., Ltd.
8	Nantong Jiangshan Agrochemical & Chemical Co., Ltd.
9	Tide Group
10	Jiangsu Good Harvest Weien Agrochemical Co., Ltd.

Source: CAC

Table 4: China's top 10 pesticide exporters (by manufacturer), 2013

No.	Enterprise
1	Beijing Nutrichem Biotechnology Co., Ltd.
2	Zhejiang Wynca Chemical Group Co., Ltd.
3	Shandong Weifang Rainbow Chemical Co., Ltd.
4	Nantong Jiangshan Agrochemical & Chemical Co., Ltd.
5	Jiangsu Yangnong Chemical Co., Ltd.
6	Tide Group
7	Nanjing Redsun Co., Ltd.
8	Fuhua Tongda Agro-chemical Technology Co., Ltd.
9	Hubei Sanonda Co., Ltd.
10	Jiangsu Good Harvest Weien Agrochemical Co., Ltd.

Source: CAC

### Fall in export value due to downturn in export prices

The fall in the top 20 manufacturers' export value was directly caused by the downturn in export prices of pesticides.

"China's export prices of most pesticides kept low in 2015," said Zhang Wenjun, director of the International Cooperation Service Department, ICAMA (ICSD, ICAMA).

According to data from ICSD, ICAMA, more than 400 types of pesticides were exported in 2015, including the registered ones and mainly non-patented products. Exports of pesticides decreased significantly: half of the top 30 pesticides declined in both volume and value. Particularly, the slumps in export value of glyphosate, imidacloprid and atrazine were twice larger than that in volume. Paraquat even grew in volume while declining in value.

Due to the downturn in export prices of pesticides (e.g. glyphosate), export value of some top 20 enterprises declined. Specifically, the rankings over 2014:

- Zhejiang Wynca Chemical Group Co., Ltd.: down from No. 2 to No. 4
- Hubei Sanonda Co., Ltd.: down from No. 6 to No. 8
- Nantong Jiangshan Agrochemical & Chemical Co., Ltd.: down from No. 8 to No. 9

Table 5: China's top 10 pesticides (export value >USD100 million), 2015

No.	Pesticide	Export volume, tonne	YoY change	Export value, million USD	YoY change
1	Glyphosate	526,400	-14.53%	1,273	-39.24%
2	Paraquat	181,400	22.75%	443	-15.79%
3	Imidacloprid	21,700	-7.86%	224	-29.34%
4	Clethodim	16,800	52.42%	144	47.07%
5	Chlorpyrifos	27,200	-24.71%	133	-27.47%
6	Atrazine	40,800	-14.95%	120	-30.49%
7	Dicamba	7,500	16.51%	117	5.55%
8	Abamectin	10,400	8.18%	109	49.15%
9	Sulfentrazone	4,000	11.98%	106	9.46%
10	Chlorothalonil	24,600	13.45%	100	19.38%

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture & China Customs

Table 6: China's top 10 pesticides (by decrease rate in export value), 2015

No.	Pesticide	Export value, million USD	YoY change
1	Rich-d-transallethrin	14.92	-55.15%
2	Acephate	94.60	-54.38%
3	Metamitron	18.66	-51.93%
4	Clopyralid	21.29	-51.12%
5	Metribuzin	43.38	-43.09%
6	Carbofuran	28.30	-41.52%
7	Glyphosate	1,272.56	-39.24%
8	Pretilachlor	18.55	-37.56%
9	Dichlorvos	20.46	-36.22%
10	Methomyl	97.28	-33.15%

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture & China Customs

### Highlighted pesticide enterprises with rise in export value

Despite the falls in export value of most top 20 pesticide exporters, there were some catching our eyes:

- Weifang Rainbow: the only enterprise with increase in sales among the top 10
- Beijing Nutrichem Biotechnology Co., Ltd. (Nutrichem): ranking No.1 again, despite slight fall in export value in 2015

The two stood out because of their own prominent advantages.

Weifang Rainbow sets up the "Investing Rapid Market Access Platform" by obtaining registrations in target market and carries out

the brand-oriented strategy to expand the overseas market. In 2015, the company signed an agreement on equity purchase with Green Crop Co., Ltd. (Argentina) to facilitate its export to Uruguay, Paraguay and Brazil. Moreover, it acquired 73% of shares of Ningxia Gerui Fine Chemical Co., Ltd. to extend its supply chain and improve its strategic layout of production base. At the end of Jan. 2016, Weifang Rainbow applied to enter the New Third Board (= National Equities Exchange and Quotations, NEEQ) for further development.

Nutrichem is one of the few domestic enterprises equipped with GLP laboratory. Based on this laboratory, the company expands market with innovative products. For years, it has ranked No.1 in pesticide exports. The company's export value in 2015 was almost the same as that in 2014 thanks to its marketing strategy and risk resistance capacity. In 2015, Nutrichem entered the NEEQ. This helped the company to enhance its brand influence, optimize asset structure by attracting more investors for financing as well as improve management efficiency and core competitiveness.

### **Large-scale pesticide exporters to appear**

According to some insiders, Sinochem Group was stepping up its adjustment in pesticide business, affected by China National Chemical Corporation (ChemChina)'s acquisition of Syngenta AG (Syngenta). Its two affiliated companies, Jiangsu Yangnong Chemical Co., Ltd. (Yangnong Chemical) and Nantong Jiangshan Agrochemical & Chemical Co., Ltd. (Nantong Jiangshan), are likely to merge in the coming future.

Sinochem International Crop Care Company Limited, another affiliated company of Sinochem Group, got listed among the top 10 pesticide exporters for the first time, after the reorganization with Sinochem Agro Co., Ltd. Also, Yangnong Chemical and Nantong Jiangshan were among the top 10 as in previous years. Cumulative export value of the three reached USD660.90 million, 22.3% of the top 10 and 15.4% of the top 20.

Hubei Sanonda Co., Ltd. (Hubei Sanonda), a subsidiary of ChemChina, was also one of the top 10. Notably, the company plans to issue new shares and raise funds to acquire assets of ADAMA Agricultural Co., Ltd. (ADAMA). ADAMA will then become a wholly-owned subsidiary of Hubei Sanonda. This acquisition will turn Hubei Sanonda into an international enterprise with greater prospect in the global pesticide market.

"Chinese enterprises are speeding up the M&A, like the business integration in Sinochem Group and ChemChina's acquisition of Syngenta. New large-scale pesticide exporters are likely to appear in the process of this internationalization. Great changes in China's exports of pesticides are to take place," said Fan Liqiang, deputy director of CCPIT CHEM.

### **Attention to pesticides exported and destinations with rapid growths in value**

In 2015, despite the first downturns in both exports and imports of the overall pesticide market over the past 5 years, rapid growths were seen in export value of some pesticides (also of export destinations), according to ICAMA. This aroused attention from the top 20 pesticide exporters.

Table 7: China's top 10 pesticides (by growth rate in export value), 2015

No.	Pesticide	Export value, million USD	YoY change	Proportion (to total export value)
1	Emamectin benzoate	21.95	276.50%	0.30%
2	Hexazinone	25.24	60.25%	0.35%
3	Chlorfenapyr	16.70	53.21%	0.23%
4	Glufosinate-ammonium	78.88	50.33%	1.08%
5	Abamectin	108.97	49.15%	1.50%
6	Clethodim	144.13	47.07%	1.98%
7	Imazapyr	15.61	32.63%	0.21%
8	Trifluralin	39.63	31.70%	0.54%
9	Pendimethalin	37.35	29.42%	0.51%
10	Haloxypop-R-methyl	50.81	25.77%	0.70%

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture & China Customs

Table 8: Top 10 export destinations of pesticides (by growth rate in export value), 2015

No.	Country	YoY change of export volume	Proportion (to total export volume)	YoY change of export value	Proportion (to total export value)
1	Iraq	108.89%	0.10%	146.73%	0.10%
2	Croatia	192.18%	0.13%	121.58%	0.12%
3	Latvia	209.65%	0.20%	101.29%	0.19%
4	Greece	136.21%	0.08%	68.79%	0.07%
5	Montenegro	71.59%	0.13%	64.59%	0.11%
6	Kazakhstan	104.32%	0.55%	48.48%	0.42%
7	Uzbekistan	78.20%	0.05%	46.50%	0.07%
8	The UK	42.80%	0.39%	38.48%	0.65%
9	Switzerland	-51.23%	0.11%	29.86%	0.50%
10	Cambodia	15.60%	0.27%	25.39%	0.17%

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture & China Customs

### More Chinese carbendazim producers resume production

Summary: According to CCM's research, although some plants suspended production under environmental protection pressure, increasing number of carbendazim plants resumed production and most leading producers are capable of supply. In the short term, China's market price of carbendazim technical is expected to rise as the orders increase. On the whole, it will remain stable in full-year 2016.

According to CCM's research, although some plants suspended production under environmental protection pressure, increasing number of carbendazim plants resumed production and most leading producers are capable of supply, including Anhui Guangxin Agrochemical Co., Ltd. (Guangxin Agrochemical), Zhejiang Wynca Chemical Group Co., Ltd. (Zhejiang Wynca) and Jiangsu Lanfeng Biochemical Co., Ltd. (Lanfeng Bio-Chem).

In March, the peak season has come. In the short term, China's market price of carbendazim technical is expected to rise since the orders increase. However, as more manufacturers continue to produce, the supply will become sufficient again. This will stabilize

the market price of carbendazim in 2016. In 2015, carbendazim was in short supply, and thus priced high.

Table 9: Production status of selected carbendazim plants in China, March 2016

Producer	Plant location	Capacity, t/a	State of plant	Remark
Anhui Guangxin Agrochemical Co., Ltd.	Anhui Province	18,000	Operating	Short in inventory
Jiangsu Lanfeng Biochemical Co., Ltd.	Ningxia Hui Autonomous Region	15,000	Operating	Short in inventory, mainly for regular clients
Zhejiang Wynca Chemical Group Co., Ltd.	Ningxia Hui Autonomous Region	15,000	Operating	Able to receive orders
Jiangsu Yangnong Chemical Co., Ltd.	Ningxia Hui Autonomous Region	10,000	Suspended for maintenance	No information on resumption of production; able to receive orders (by outsourcing)
Lianyungang Jindun Co., Ltd.	Jiangsu Province	8,000	Suspended for maintenance	/
Jiangsu Taicang Agrochemical Co., Ltd.	Jiangsu Province	1,000	Operating	For self-use & export

Source: CCM

In 2015, domestic carbendazim technical was in short supply under the pressure from environmental protection, and thus its market price maintained high. In the past few years, some leading carbendazim producers relocated their production plants to the chemical industries parks in western China. However, in 2015, these plants experienced heavier pressure as more national attention was paid to environmental protection in the region. Moreover, the "Two Sessions" in 2015 took priority over the environmental improvement in the western areas. It was clearly stated that the whole industrial park would have to shut down if the discharge of wastewater failed to meet the standards. Some thus cut down the production. This largely pulled down the output of domestic carbendazim.

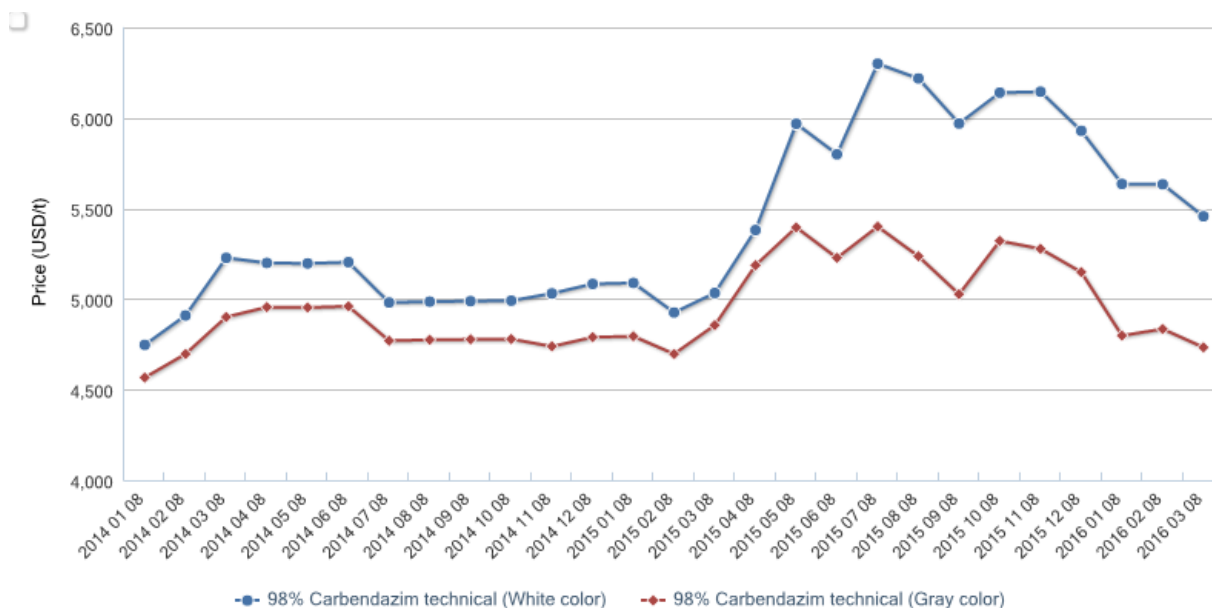
Very few domestic enterprises could operate normally. In particular,

- Guangxin Agrochemical: the only producer operating
- Lanfeng Bio-Chem: production suspended from March to Dec. 2015
- Jiangsu Yangnong Chemical Co., Ltd.: production suspended from March till now

Therefore, with less output, few carbendazim technical were available in the market. Therefore, the market price soared in 2015. Even later in the slack season, this short supply didn't get eased.

"Two Sessions": the shorthand for the Chinese People's Political Consultative Conference (CPPCC), China's top national advisory body, and the meeting of the National People's Congress (NPC), the top legislative body.

Figure 2: Ex-works price of 98% carbendazim technical in China, Jan. 2014-March 2016



Source: CCM

"Carbendazim is a bulk product in fungicide market," said some insiders, "It is featured in high efficiency, low toxicity, broad spectrum, great compatibility and wide application. Common types of formulations include DP, WP and SC. It can be applied in the fields of crops (including rice, wheat, cotton, rape, fruit trees, vegetables, peanut, sweet potato and flowers) and chemical industries (including papermaking, oil painting, coating, spinning, rubber and leather)."

At present, without large rivals overseas, China is a dominant carbendazim producer globally. With expansion in business and upgrading in quality and techniques, carbendazim has become a leading exported fungicide. In domestic end market, this fungicide is in demand for the expansion in planting areas of commercial crops, promotion of new mixed formulation and development of seed coating agents.

## Company Dynamics

### IPP, CAAS signs with ALS a distribution licensing agreement on China's first plant immunoprotein biopesticide with ALS

Summary: At the end of Feb. 2016, IPP, CAAS signed with ALS a distribution licensing agreement, granting it exclusive global access to "Atailing", China's first plant immunoprotein biopesticide. Through cooperation with international pesticide enterprise, this biopesticide is expected to be promoted around the world. Also the success of it will set a good example of internationalization of Chinese technology and open a new chapter for multinational cooperation.

At the end of Feb. 2016, the Institute of Plant Protection, Chinese Academy of Agricultural Sciences (IPP, CAAS) signed a distribution licensing agreement with Arysta LifeScience Co., Ltd. (ALS), granting the company exclusive global access to "Atailing", China's first plant immunoprotein biopesticide (6% oligosaccharide WP).

A protein biopesticide research team, headed by Dr. Qiu Dewen, deputy director of IPP, CAAS, successfully developed "Atailing" after studying features of plant diseases and plant resistance for decades. In 2014, the pesticide was registered and brought on stream. In June 2014, it was launched in China, full-year sales >USD10.71 million (RMB70 million).



ALS started to contact with IPP, CAAS in 2014. In Jan. 2015, the company launched a so-called "Green Tea Project" and began global market survey and assessment towards "Atailing".

Comprehensive and multiple sample analytic examinations and indoor bioassays done by the St Malo Laboratory in France, as well as 35 trials done in 8 countries in America, Africa and Asia turned out that: Environmentally-friendly, "Atailing" has good efficacy in enhancing plant immunity, controlling diseases (caused by viruses, fungi and bacteria), promoting the growth of plant roots and increasing yields.

ALS sent specialists to China for market surveys and discussions for 3 times. Moreover, the company investigated performance of the pesticide on oranges and vegetables and collected feedback from users. ALS made rigorous analysis and assessment, and finally decided to be the exclusive overseas sales agent for "Atailing" after further discussions and negotiations.

As a leading enterprise in crop protection and biotechnology, ALS provides innovative agrochemicals for 125 countries. The distribution licensing agreement granted ALS the rights to use and develop the plant immunoprotein technology and relevant formulations from IPPCAAS. This cooperation met the company's need in growing portfolio of biosolution products and further expanded its offerings to growers around the world.

This agreement marked the beginning of Sino-US cooperation in crop diseases control and prevention and biopesticide distribution. IPP, CAAS was confident and expected "Atailing" to be promoted around the world through cooperation with international pesticide enterprise. Also the success of this biopesticide will set a good example of internationalization of China-developed technology and open a new chapter for multinational cooperation.

Notably, besides ALS, many other international agrochemical enterprises also contacted the institute for overseas access to "Atailing", according to IPP, CAAS.

## **Limin Chemical to raise funds to strengthen leading position in fungicide market**

Summary: Limin Chemical plans to make a private placement for its high-efficient pesticide projects, basic raw material projects and replenishment in liquid capital. This will assist the company to further expand business and improve profitability, which improves its comprehensive competitiveness and carries forward the strategic goals.

On 20 March, 2016, Limin Chemical Co., Ltd. (Limin Chemical) announced to make a private placement for its high-efficient pesticide projects, basic raw material projects and replenishment in liquid capital. Altogether 3,275.43 shares will be issued to raise a fund of USD116.22 million (RMB759.90 million) for the upgrading of the company's knockout products and the supply of upstream raw materials. This investment is believed to further Limin Chemical's leading position in China's fungicide market. Also, "It allows us to further expand business and improve profitability, which makes us more competitive and carries forward the strategic goals," said Limin Chemical.

### **Upgrading of leading pesticides and new profit growth**

Limin Chemical intends to invest USD54.22 million (RMB354.51 million) of the fund into the high-efficient projects, including:

- Metam-sodium project: 20,000 t/a







- Propineb project: 5,000 t/a
- Difenconazole project: 500 t/a
- Azoxystrobin project: 500 t/a

Propineb, metam-sodium and difenoconazole have been the company's leading fungicides for years. This expansion will make them more competitive by upgrading techniques and quality.

Azoxystrobin became off-patent in 2010 and is a new generic pesticide. It is broad-spectrum, targeted at many diseases caused by fungi, like powdery mildew, rust, scab, downy mildew, rice blast, etc. This leads to its expansion in fungicide market. Thus, it is the high time for Limin Chemical to develop azoxystrobin project for new profit growth and richer product structure.

### **Self-sufficiency in raw materials to reduce cost**

Altogether USD52.21 million (RMB341.39 million) will be used in the basic material projects, including:

- Ethylenediamine project: 10,000 t/a
- 1, 2-Propylenediamine project: 5,000 t/a

The two, costing millions of dollars to purchase annually, are the major raw materials for the company's propineb and mancozeb fungicides. At present, there are still few 1, 2-propylenediamine and ethylenediamine manufacturers in China. The domestic supply are dominated by international chemical giants, such as BASF, and replenished by Shandong Lianmeng Chemical Group Co., Ltd. Limin Chemical can extend its supply chain up to raw materials after the construction of the two projects. This will reduce the cost and guarantee the supply of raw materials.

### **Replenishment in liquid capital to ease operating pressure**

Totally USD9.79 million (RMB64 million) will be added to the liquid capital. As the company's business expands, the need for operating capital and liquid capital will also grow. This replenishment can relieve pressure from operating capital shortage, reduce financial costs and enhance financial liquidity.

Limin Chemical is one of the leading fungicide enterprises in China. So far, its total capacity has reached 33,000 t/a. Specifically:

- \*EBDC fungicides (mancozeb, metiram, zineb, maneb): 20,000 t/a
- Fosetyl-aluminium: 5,000 t/a
- Metam-sodium: 5,000 t/a
- Cymoxanil: 2,000 t/a
- Pyrimethanil: 1,000 t/a

According to Limin Chemical, not only has it been the supplier for domestic pesticide formulation enterprises, like Shenzhen Noposion Agrochemicals Co., Ltd. and Zhejiang Heben Pesticide & Chemicals Co., Ltd., but also for some pesticide giants, like DuPont, Syngenta and Bayer CropScience. Moreover, over 60% of the company's products are exported to Europe, Southeast Asia, Africa, America and the Middle East.



## Import & export

### China's exports of tebuconazole technical: YoY falls in both volume and price in 2015

Summary: In full-year 2015, both export volume and average export price of tebuconazole technical decreased, down by 2.93% and 10.14% YoY respectively, according to China Customs and CCM's analysts.

In 2015, China's exports of tebuconazole technical included 95% tebuconazole technical, 96% tebuconazole technical, 97% tebuconazole technical and 98% tebuconazole technical, according to China Customs and CCM's analysts.

#### Export price

Average export price of tebuconazole technical in 2015 declined by 10.14% YoY to USD10.54/kg. Specifically:

- 95% tebuconazole technical: down by 6.66%
- 96% tebuconazole technical: down by 13.24%
- 97% tebuconazole technical: down by 8.04%
- 98% tebuconazole technical: down by 10.29%

#### Export volume

However, among the four exported tebuconazole technical, only export volume of 97% tebuconazole technical increased by 8.12% YoY, while the other three all declined sharply. Overall, China's total export volume of tebuconazole technical was 7,430.40 tonnes, slightly down by 2.93%.

#### Export destination

China's tebuconazole technical was exported to 42 countries and regions in 2015. Among them, the US, Israel and Germany were the top three export destinations by volume. Specifically:

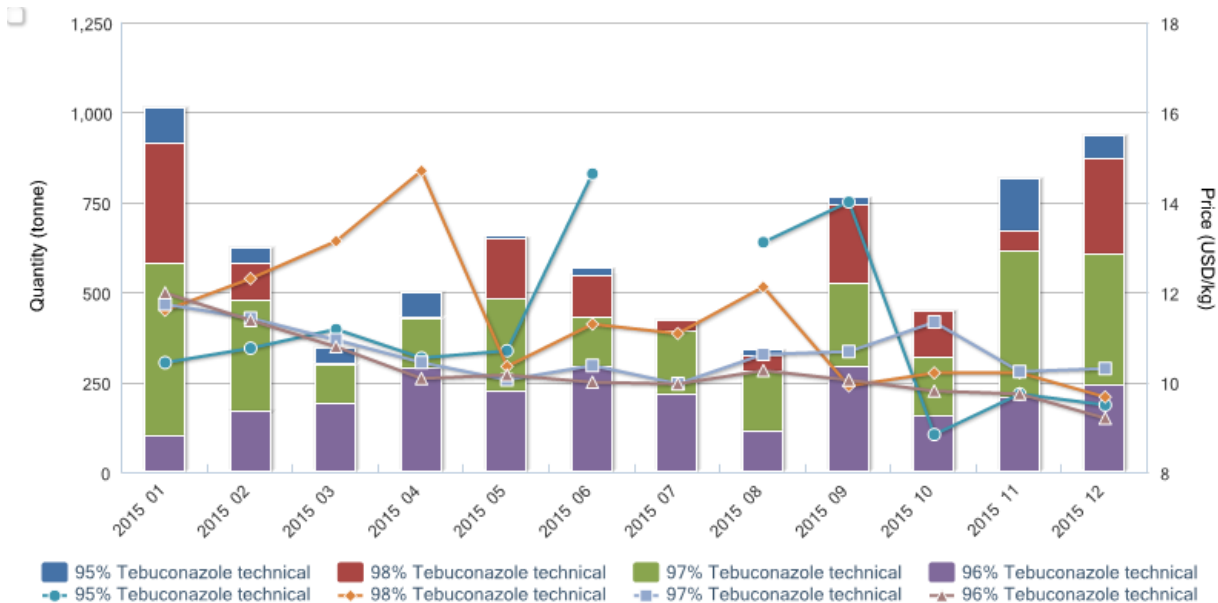
- The US: 1,233.21 tonnes
- Israel: 1,200.75 tonnes
- Germany: 1,158.09 tonnes

The three were combined to take up 48.34% of the national total.

#### Exporter (by manufacturer)

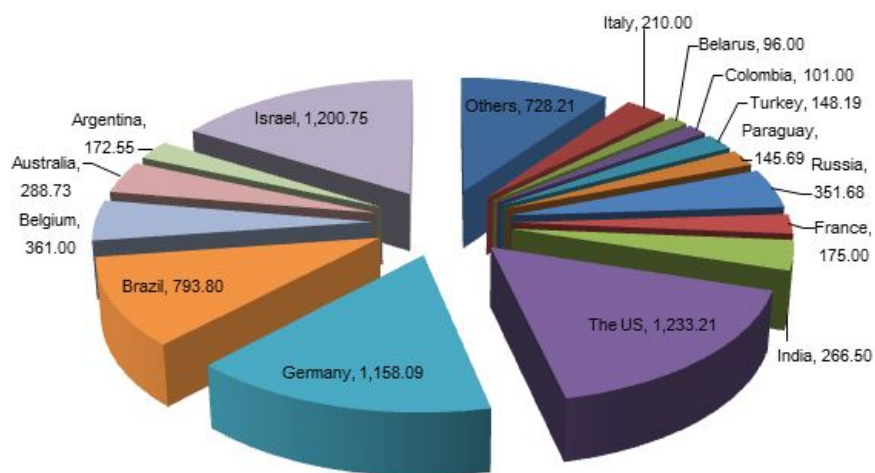
In 2015, the top three manufacturers of tebuconazole technical were Jiangsu Sword Agrochemicals Co., Ltd., Jiangsu Sevencontinent Green Chemical Co., Ltd. and Shangyu Nutrichem Co., Ltd. In total, they exported 6,198.66 tonnes of tebuconazole technical, 83.42% of the national figure in 2015.

Figure 3: China's exports of tebuconazole technical, 2015



Source: China Customs and CCM

Figure 4: Selected export destinations of tebuconazole technical from China, 2015



Source: China Customs and CCM

Table 10: Top 5 exporters of tebuconazole technical (by manufacturer) in China, 2015

Enterprise	Export volume, tonne	Export value, million USD
Jiangsu Sword Agrochemicals Co., Ltd.	2,756.74	29.76
Jiangsu Sevencontinent Green Chemical Co., Ltd.	1,995.05	19.91
Shangyu Nutrichem Co., Ltd.	1,446.87	15.15
Jiangsu Fengdeng Pesticide Co., Ltd.	406.41	4.11
Jiangsu Agrochem Laboratory Co., Ltd.	274.88	3.15

Source: China Customs and CCM

## China's export volume of fungicide formulations increases by 10.24% YoY in 2015

Summary: In 2015, China's export volume and export value of fungicide formulations both increased YoY, but the rise of the value was much smaller than that of the volume, affected by the downturn in the overall pesticide market.

In 2015, China's fungicide market was influenced by the downturn of pesticide market to some extent. China's export volume of fungicide formulations increased greatly, while the growth of export value was relatively small. According to data from China Customs, altogether 82,777 tonnes of fungicide formulations were exported in 2015, up by 10.24% YoY, whereas the export value merely rose by 5.33% to USD435.40 million. This reveals that the average export price decreased sharply over 2014.

### Exports by packing

Export volume of fungicide formulations for retail sale reached 36,750 tonnes, 44.4% of the national figure, and not for retail sale 46,027 tonnes, 55.6% of the national total.

Despite the comparatively larger export volume, the export value of fungicide formulations in non-retail sale packing was not much higher than the ones for retail sale.

### Exports by month

The export volume in Jan., March and July fell YoY, but rose in the rest of 2015. However, the export value fell to some degree in Jan., March, June, July and Nov.

Table 11: China's exports of fungicide formulations (by month), 2015

Month	Export volume, tonne	YoY change	Export value, million USD	YoY change
Jan.	7,319	-5.80%	42.39	-2.12%
Feb.	6,523	84.98%	40.16	143.85%
March	6,153	-19.83%	31.95	-21.18%
April	7,969	17.45%	43.73	13.07%
May	6,943	14.90%	37.07	8.46%
June	7,210	7.65%	36.71	-0.98%
July	6,906	-3.00%	34.23	-15.54%
Aug.	6,311	4.72%	31.31	0.25%
Sept.	6,474	15.45%	32.73	5.46%
Oct.	6,589	17.96%	32.27	3.34%
Nov.	6,206	3.20%	30.07	-9.09%
Dec.	8,174	31.00%	42.77	18.80%
<b>Total</b>	<b>82,777</b>	<b>10.24%</b>	<b>435.40</b>	<b>5.33%</b>

Source: China Customs and CCM

### Export destination

Vietnam was the largest export destination of fungicide formulations from China by export value. According to China Customs, figures about exports to Vietnam were:

- Volume: 7,280 tonnes, 8.79% of the national total
- Value: USD29.90 million, 6.87% of the national total

Indonesia and Columbia were the second and third largest export destinations (by export value).

In general, China's export of fungicide formulations were mainly centred in several destinations. Export value from top 10 export destinations reached USD162.49 million, 37.32% of the national figure.

### Exporter

- By region

The top 3 export regions of fungicide formulations in 2015 were Jiangsu, Zhejiang and Shandong. Totally:

- Export volume: 61,546 tonnes, 74.35% of the national total
- Export value: USD340.07 million, 78.11% of the national total

Among the three, Jiangsu was the largest export region:

- Export volume: 44,532 tonnes, 53.80% of the national total
- Export value: USD217.20 million, 49.88% of the national total

- By port

In 2015, China's fungicide formulations were mainly exported through Shanghai Port. Specifically:

- Export volume: 71,793 tonnes, 86.73% of the national total
- Export value: USD371.90 million, 85.42% of the national total

Nanjing Port and Qinghai Port were the second and third largest export ports.

Table 12: Top 10 export destinations of fungicide formulations from China (by value), 2015

No.	Destination	Export volume, tonne	Proportion	Export value, million USD	Proportion
1	Vietnam	7,280	8.79%	29.90	6.87%
2	Indonesia	4,101	4.95%	24.65	5.66%
3	Columbia	3,318	4.01%	18.12	4.16%
4	Thailand	3,987	4.82%	15.70	3.61%
5	Brazil	2,676	3.23%	14.97	3.44%
6	Russia	2,338	2.82%	13.16	3.02%
7	Ukraine	2,244	2.71%	13.02	2.99%
8	Egypt	2,544	3.07%	11.58	2.66%
9	The US	1,538	1.86%	10.81	2.48%
10	Uruguay	959	1.16%	10.58	2.43%

Source: China Customs and CCM

Table 13: Selected export regions of fungicide formulations from China (by value), 2015

No.	Export region	Export volume, tonne	Export value, million USD
1	Jiangsu Province	44,532	217.20
2	Zhejiang Province	12,897	90.66
3	Shandong Province	4,118	32.21
4	Anhui Province	4,569	17.80
5	Shanghai City	3,036	16.49
6	Guangdong Province	2,347	13.67
7	Hebei Province	4,016	12.12
8	Jiangxi Province	779	5.90
9	Heilongjiang Province	326	3.99
10	Ningxia Hui Autonomous Region	2,910	3.83

Source: China Customs and CCM

Table 14: Selected export ports of fungicide formulations in China (by value), 2015

No.	Port	Export volume, tonne	Export value, million USD
1	Shanghai Port	71,793	371.90
2	Nanjing Port	2,511	16.41
3	Qingdao Port	1,347	12.03
4	Beijing Port	124	7.53
5	Huangpu Port	726	4.49
6	Ningbo Port	414	4.22
7	Tianjin Port	3,146	3.61
8	Ji'nan Port	471	2.94
9	Kunming Port	451	1.99
10	Wuhan Port	79	1.96

Source: China Customs and CCM

## China's import volume of fungicide formulations falls by 22.09% YoY in 2015

Summary: In Q4 2015, China's import volume of fungicide formulations continued declining by a larger percentage, following the decreases in the previous three quarters. In total, the import volume of fungicide formulations fell by 22.09% YoY in 2015.

In Q4 2015, China's import volume of fungicide formulations continued declining by a larger percentage. Data from China Customs



showed that in full-year 2015:

- Import volume: 23,290 tonnes, down by 22.09% YoY (19,673 tonnes from Q1-Q3, down by 20.06%)
- Import value: USD278.25 million, down by 12.73% YoY

Obviously, the fall in import value was nearly 10 percentage points smaller than that in the volume.

Compared with the export price, import price of fungicide formulations were relatively more stable, because most of the imported fungicide formulations were premium-marketed.

### Imports by packing

Not for retail sale

- Import volume: 21,875 tonnes, 93.92% of the national total
- Import value: USD265.81 million, 95.53% of the national total

For retail sale

- Import volume: very small proportion
- Import value: very small proportion

### Imports by month

Except YoY rises in March and April, the import volume fell to different degrees in the rest of 2015. In particular, the volume fell by over 50% in Aug. and Oct.

Compared with 2014, the import value rose in Jan., March, April and Dec.





Table 15: China's imports of fungicide formulations (by month), 2015

Month	Import volume, tonne	YoY change	Import value, million USD	YoY change
Jan.	2,417	-2.24%	35.07	26.16%
Feb.	2,286	-20.69%	19.98	-37.41%
March	3,702	12.38%	37.81	20.74%
April	3,821	14.58%	42.14	20.71%
May	1,886	-38.28%	22.59	-32.50%
June	1,920	-30.49%	23.15	-23.16%
July	1,601	-33.45%	17.77	-42.61%
Aug.	985	-56.51%	18.17	-31.32%
Sept.	1,054	-50.69%	11.74	-37.11%
Oct.	697	-55.51%	12.96	-5.07%
Nov.	850	-46.52%	11.84	-29.41%
Dec.	2,070	-2.69%	25.00	9.86%
<b>Total</b>	<b>23,290</b>	<b>-22.09%</b>	<b>278.25</b>	<b>-12.73%</b>

Source: China Customs and CCM

### Import origin

In 2015, Germany and India were the leading import origins of fungicide formulations to China.

- Germany ranked first by import value: USD37.32 million, 13.41% of the national total
- India ranked first by import volume: 3,185 tonnes, 13.68% of the national total

In all, imports of fungicide formulations from the top 10 origins were:

- Volume: 18,816 tonnes, 80.79% of the national total
- Value: USD231.66 million, 83.26% of the national total

### Importer

- By region

Jiangsu Province was the largest import region of fungicide formulations.

- Import volume: 9,037 tonnes, 38.80% of the national total
- Import value: USD141.09 million, 50.71% of the national total

Zhejiang Province was the second largest with an import value of USD48.07 million. The import value of Shanghai ranked third, achieving USD38.81 million.

- By port

Shanghai Port continued to be the largest import port of fungicide formulations. In 2015, imports through Shanghai Port were:

- Volume: 12,852 tonnes, 55.18% of the national total
- Value: USD167.59 million, 60.23% of the national total

Table 16: Top 10 import origins of fungicide formulations to China (by value), 2015

No.	Origin	Import volume, tonne	Import value, million USD
1	Germany	2,938	37.32
2	France	1,808	31.74
3	South Korea	1,404	30.55
4	Spain	1,951	29.01
5	Japan	1,736	23.55
6	India	3,185	22.63
7	The US	1,346	21.47
8	Columbia	2,338	14.45
9	Thailand	1,762	12.82
10	The UK	348	8.12

Source: China Customs and CCM

Table 17: China's top 10 regions importing fungicide formulations (by value), 2015

No.	Region	Import volume, tonne	Import value, million USD
1	Jiangsu Province	9,037	141.09
2	Zhejiang Province	3,703	48.07
3	Shanghai	4,159	38.81
4	Guangdong Province	2,296	20.28
5	Shandong Province	1,217	10.59
6	Beijing	1,663	8.21
7	Tianjin	697	5.54
8	Anhui Province	107	3.28
9	Hebei Province	101	0.54
10	Liaoning Province	36	0.51

Source: China Customs and CCM

Table 18: China's top 10 import ports of fungicide formulations (by value), 2015

No.	Port	Import volume, tonne	Import value, million USD
1	Shanghai Port	12,852	167.59
2	Huangpu Port	2,911	38.15
3	Hangzhou Port	2,195	33.36
4	Tianjin Port	2,763	18.51
5	Jiangmen Port	93	5.74
6	Qingdao Port	940	4.01
7	Shenzhen Port	225	3.37
8	Nanjing Port	362	3.06
9	Ningbo Port	483	1.55
10	Shantou Port	198	0.85

Source: China Customs and CCM

## Registration

### Fifteen fungicide technical registered in China, Feb. 2016

Summary: In Feb. 2016, 15 new registrations of fungicide technical (excluding renewal of registrations), including 12 active ingredients, were approved in China, according to the Institute for the Control of Agrochemicals, Ministry of Agriculture.

In Feb. 2016, 15 new registrations of fungicide technical, including 12 active ingredients (AI), were approved in China, according to the Institute for the Control of Agrochemicals, Ministry of Agriculture. Renewal of registrations were excluded.

#### Active ingredient

Enterprises continued focusing on off-patent fungicides.

Pyraclostrobin was registered 3 times, respectively by:

- Jiangsu Xinnong Chemical Co., Ltd.: 97.5% pyraclostrobin TC
- Shanghai High Victory Fine Chemical Co., Ltd.: 97.5% pyraclostrobin TC
- Shaanxi Xian Nong Biology Science Co., Ltd.: 98% pyraclostrobin TC

Besides, azoxystrobin was registered twice. The other 10 AIs of fungicide were all registered once. By Feb., the cumulative registration number of pyraclostrobin and azoxystrobin reached 31 and 73 respectively.

Notably, there were 4 AIs first registered in China:

- *Sphaerotheca amyloliquefaciens*: 10 billion spore/g TK, by Shaanxi Xian Nong Biology Science Co., Ltd.
- Prochloraz: 98% TC, by Jiangsu Hui Feng Agrochemical Co., Ltd.
- Dufulin: 98% TC, by Guangxi Tianyuan Biochemistry Co., Ltd.
- Tetramycin: 15% TK, by Liaoning Wkioc Bioengineering Co., Ltd.

#### Registrant

- Number of registrant: 15 certificates vs. 14 registrant, one registrant obtaining 2 certificates
- 3 foreign pesticide enterprises included: BASF, DuPont and Gowan Company, LLC.

Table 19: New registrations of fungicide technical in China, Feb. 2016

No.	Active ingredient	Specification	Registrant	Number of registration (by Feb.)
1	Zoxamide	96% TC	Gowan Company, LLC.	3
2	Pyraclostrobin	97.5% TC	Jiangsu Xinnong Chemical Co., Ltd.	31
3		97.5% TC	Shanghai High Victory Fine Chemical Co., Ltd.	
4		98% TC	Shaanxi Xian Nong Biology Science Co., Ltd.	
5	Kasugamycin	70% TC	Chifeng Pharmaceutical Co., Ltd.	11
6	Dufulin	98% TC	Guangxi Tianyuan Biochemistry Co., Ltd.	1
7	Oxathiapiprolin	95% TC	DuPont USA	2
8	Fluxapyroxad	98% TC	BASF SE	2
9	Fludioxonil	97% TC	Jiangsu Yunfan Chemical Co., Ltd.	19
10	Sphaerotheca amyloliquefaciens	10 billion spore/g TK	Shaanxi Xian Nong Biology Science Co., Ltd.	1
11	Myclobutanil	95% TC	Zhejiang Heben Pesticide & Chemicals Co., Ltd.	10
12	Prochloraz	98% TC	Jiangsu Huifeng Agrochemical Co., Ltd.	1
13	Azoxystrobin	98% TC	Jiangsu Lianyungang Liben Agro-chemical Co., Ltd.	73
14		93% TC	Jiangxi Oushi Chemical Co., Ltd.	
15	Tetramycin	15% TK	Liaoning Wkioc Bioengineering Co., Ltd.	1

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture

## Brief news

### Lianhetech to invest USD45.99 million into fluxapyroxad intermediate project

In Feb., 2016, Lianhe Chemical Technology Co., Ltd. (Lianhetech) announced to make a private placement for <= USD221.76 million (RMB1.45 billion) in total. This sum will be invested into 4 projects:

- Pharmaceutical intermediate project, including LT822 (400 t/a), TMEDA (10 t/a), MACC (20 t/a), and AMTB (15 t/a)
- Technological upgrading project of LH-1 (1,000 t/a)
- Technological upgrading project of ammonia oxidation pesticides (9,000 t/a)
- Replenishment of current capital

Specifically, USD45.99 million (RMB300.70 million) will be put into the technological upgrading project of LH-1.

LH-1 is an important pesticide intermediate used to formulate SDHI fungicides, mainly fluxapyroxad at present. LT822, TMEDA, MACC, and AMTB are the key intermediates for innovative drugs treating angiocardiopathy, diabetes, and major depressive disorder which are in great demand.

Lianhetech said, "This investment will be favorable for us to expand pharmaceutical business, to strengthen agrochemical business, and to develop market in fine and functional chemicals. In this way, we can better our production and research capability in the three strategic businesses."

Table 20: Four projects to be constructed by Lianhetech

No.	Project	Total investment, million USD	Fund to be raised, million USD	Project executor
1	Pharmaceutical intermediate project, including LT822 (400 t/a), TMEDA (10 t/a), MACC (20 t/a), and AMTB (15 t/a)	89.07	85.65	Lianhe Chemical Technology (Taizhou) Co., Ltd.
2	Technological upgrading project of LH-1 (1,000 t/a)	45.99	45.88	Lianhe Chemical Technology (Yancheng) Co., Ltd.
3	Technological upgrading project of ammonia oxidation pesticides (9,000 t/a)	27.50	24.47	Lianhe Chemical Technology (Yancheng) Co., Ltd.
4	Replenishment of current capital	/	The rest	/

Source: Lianhe Chemical Technology Co., Ltd.

## Nissan Chemical's amisulbrom first to register in China

On 26 Feb., 2016, the Institute for the Control of Agrochemicals, Ministry of Agriculture (ICAMA) issued the second list of pesticides to be approved for registration in 2016. It will be the first time for amisulbrom technical and formulations produced by Nissan Chemical Industries, Ltd. (Nissan Chemical) to obtain registration in China.

- Product: 97.5% amisulbrom TC (low toxicity) and 18% amisulbrom SC (micro toxicity)
- Target: cucumber downy mildew
- Use amount (spraying): 60-80 g/ ha based on active ingredient

Amisulbrom is a contact fungicide with strong fungicidal activity against blights and downy mildew, especially the isolated spores. It works as a preventive fungicide by inhibiting respiration of fungi and germination of spores. Besides, it has osmotic activity and good resistance to rainfall erosion.

## Shenzhen Noposion: net profit reaches USD34.80 million in 2015

On 25 Feb., 2016, Shenzhen Noposion Agrochemicals Co., Ltd. (Shenzhen Noposion) made its full-year 2015 financial pre-announcement. Accordingly, the company grew steadily in business:

- Total revenue: USD337.18 million (RMB2.20 billion), up by 0.09% YoY
- Total profit: USD39.99 million (RMB261.45 million), up by 9.57% YoY
- Operating profit: USD38.96 million (RMB254.74 million), up by 17.35% YoY
- Net profit: USD34.80 million (RMB227.56 million), up by 17.01% YoY

Table 21: Shenzhen Noposion's financial figures, 2015, million USD

Item	2015	2014	YoY change, %
Total revenue	337.18	336.89	0.09
Total profit	39.99	36.49	9.57
Operating profit	38.96	33.20	17.35
Net profit	34.80	29.74	17.01
Item	31 Dec., 2015	31 Dec., 2014	YoY change, %
Total assets	477.80	386.36	23.67
Net assets	266.43	236.17	12.81

Source: Shenzhen Noposion Agrochemicals Co., Ltd.

## Jiangsu Huifeng: large rise in online sales of pesticide formulations

On 3 March, 2016, Jiangsu Huifeng Agrochemical Co., Ltd. (Jiangsu Huifeng) announced on the Investor Relation Management (IRM) platform that both online and offline sales of its pesticide formulations had increased prosperously, especially online business.

Notably, Jiangsu Huifeng ever said, "Financial performance in 2015 will be greatly affected by weak profitability of online business and the E-commerce platform of agricultural means of production, Nongyi Net, which is at the stage of investment and promotion."

## Another two enterprises voluntarily give up pesticide production qualifications

Another two enterprises voluntarily give up pesticide production qualifications

On 9 March, 2016, the Ministry of Industry and Information Technology of the People's Republic of China issued the second list of enterprises voluntarily giving up pesticide production qualifications. The list will be publicized until 16 March in 2016. The two corporations listed are Jiangxi Ganzhou Weinong Pesticide Co., Ltd. and Hangzhou Lvpuda Science and Technology Co., Ltd.

Table 22: The second list of enterprises voluntarily giving up pesticide production qualifications in March 2016

No.	Province	Enterprise	Product	Registration/enterprise address
1	Jiangxi	Jiangxi Ganzhou Weinong Pesticide Co., Ltd.	Technical	Hugang Village, Shuidong Town, Ganzhou City, Jiangxi Province
2	Zhejiang	Hangzhou Lvpuda Science and Technology Co., Ltd.	Formulations	Zhushan Village, Jiangnan Town, Tonglu County, Hangzhou City

Source: Ministry of Industry and Information Technology of the People's Republic of China

## Nantong Weilike to launch 3,400 t/a pesticide formulation expansion project

Nantong Weilike to launch 3,400 t/a pesticide formulation expansion project

On 10 March, 2016, Nantong Weilike Chemicals Co., Ltd. (Nantong Weilike) made a second announcement on the Environmental Impact Assessment results of its 3,400 t/a pesticide formulation expansion project.

Specifically, Nantong Weilike will invest USD0.76 million (RMB5.00 million) into the project, which will be constructed based on current factory in the High-tech Park of Rudong Coastal Economic Development Zone. After construction, the capacity will expand to:

- 500 g/L Carbendazim SC, 1,000 t/a
- 860 g/L Tridemorph OL, 200 t/a
- 880 g/L Fenpropimorph OL, 200 t/a
- 50% Pretilachlor EC, 500 t/a
- 75% Acephate SPX, 500 t/a
- 70% Imidacloprid + acephate WP, 500 t/a
- 92% Acephate SGX, 500 t/a





## Shanghai Heben-Eastsun: first domestic enterprise obtains "Three Certificates" of pyraclostrobin TC

On 15 March, 2016, the Ministry of Industry and Information Technology of the People's Republic of China released the list of 25 pesticide TC/TK obtaining production approval certificate. Shanghai Heben-Eastsun Medicaments Co., Ltd. (Shanghai Heben-Eastsun)'s 97.5% pyraclostrobin TC was on the list. The company was the first to obtain the "Three Certificates" of pyraclostrobin TC in China.

Shanghai Heben-Eastsun is a designated manufacturer of pesticide technical and formulations, approved by the National Development and Reform Commission of the People's Republic of China. As an innovative high-tech enterprise, it focuses on researching and developing new production technology of pesticides and products for patent application. Its pesticides have been sold to 58 countries, including Italy, France, Costa Rica, Argentina and New Zealand.

Notably, Shanghai Heben-Eastsun was also the first domestic enterprise to obtain the "Three Certificates" of azoxystrobin technical.

"Three Certificates": refers to the certificates required for pesticides in China, including the certificates of pesticide registration, production approval and pesticide criteria.

## Lanfeng Bio-Chem: rise in net profit in Q1 2016

On 16 March, Jiangsu Lanfeng Biochemical Co., Ltd. (Lanfeng Bio-Chem) made its Q1 2016 financial pre-announcement. In Q1 2016 (1 Jan.-31 March, 2016), the company reported a rise in net profit to +USD3.82-5.35 million (RMB25-35 million), vs. -USD0.77 million (RMB5.06 million) in Q1 2015.

According to Lanfeng Bio-Chem, two wholly-owned subsidiaries of the company were the vital contributors:

1. Shaanxi Fangzhou Pharmaceutical Co., Ltd. was added to the consolidated financial statements, and thus the net profit increased.
2. Ningxia Lanfeng Fine Chemical Co., Ltd. resumed production. In Q1 2015, the company suspended production for rectification due to environmental pollution.



## Jiangsu Province: 86,000 tonnes of fungicides exported in 2015

According to data from the Jiangsu Crop Protection Industry Association, Jiangsu Province's exports of fungicides in 2015 reached 86,000 tonnes in volume, 14.6% of the total export of pesticides in the province and the value accounted for 19.4% of the provincial figure.

### Export destination

- By continent

Jiangsu Province's exports of fungicides were:

- Europe: 29.7%
- Asia: 26.1%
- South America: 21.8%
- Africa: 11.3%
- North America: 8.2%
- Oceania: 2.9%

- By country/region

The fungicides were mainly exported to: the US, Netherlands, Brazil, Vietnam, Italy, Belgium, Columbia, France, Indonesia, Tanzania and Australia.

### Exported fungicide

The exported fungicides mainly included: chlorothalonil, mancozeb, tebuconazole, fosetyl-aluminium, carbendazim, propiconazol, metalaxyl, prochloraz, azoxystrobin, cymoxanil, tricyclazole, thiophanate-methyl and flutriafol.

## Jiangsu Province: rape sclerotinia to strike moderately on the whole and heavily in some areas

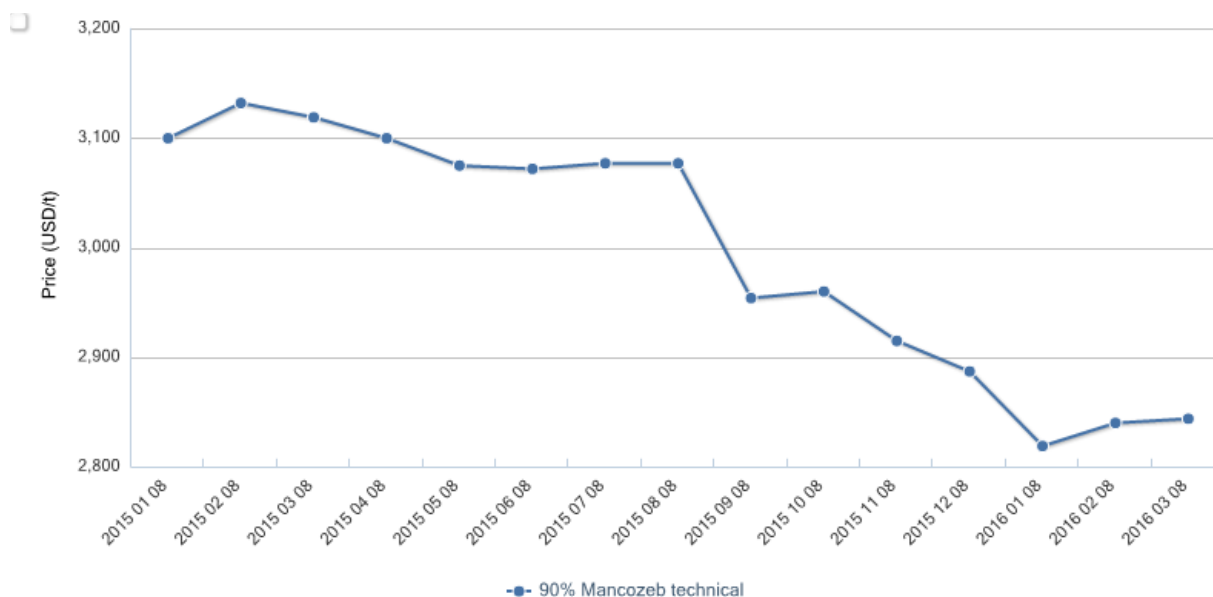
In 2016, the Plant Protection Station of Jiangsu Province predicted rape sclerotinia to strike moderately on the whole and heavily in the southern and coastal areas. With the warming-up since mid-March in the province, gradually the rapes began the florescence during which they are also easy to infect with rape sclerotinia. This disease is the largest threat to rapes.

Opinions on the prevention and control of rape sclerotinia have been released. In detail, procymidone, dimetachlone, iprodione, propiconazol, and prochloraz are recommended to treat this disease. The use of benzimidazole fungicides is advised to stop in regions along rivers that are highly resist to carbendazim.

## China's market price of mancozeb likely to rise in the short run

In March 2016, China's market price of mancozeb remained stable. However, with increases in demand and exports, mancozeb will be in short supply. Thus, in the short run, its market price is likely to rise. Before the opening of the 17<sup>th</sup> China International Agrochemical & Crop Protection Equipment Exhibition, some manufacturers started hoarding mancozeb (for higher price). March saw the great demand in mancozeb. Thus, currently mancozeb is in short supply. So far, most of the leading mancozeb producers have operated at full capacity.

Figure 5: Ex-works price of 90% mancozeb technical in China, Jan. 2015-March, 2016

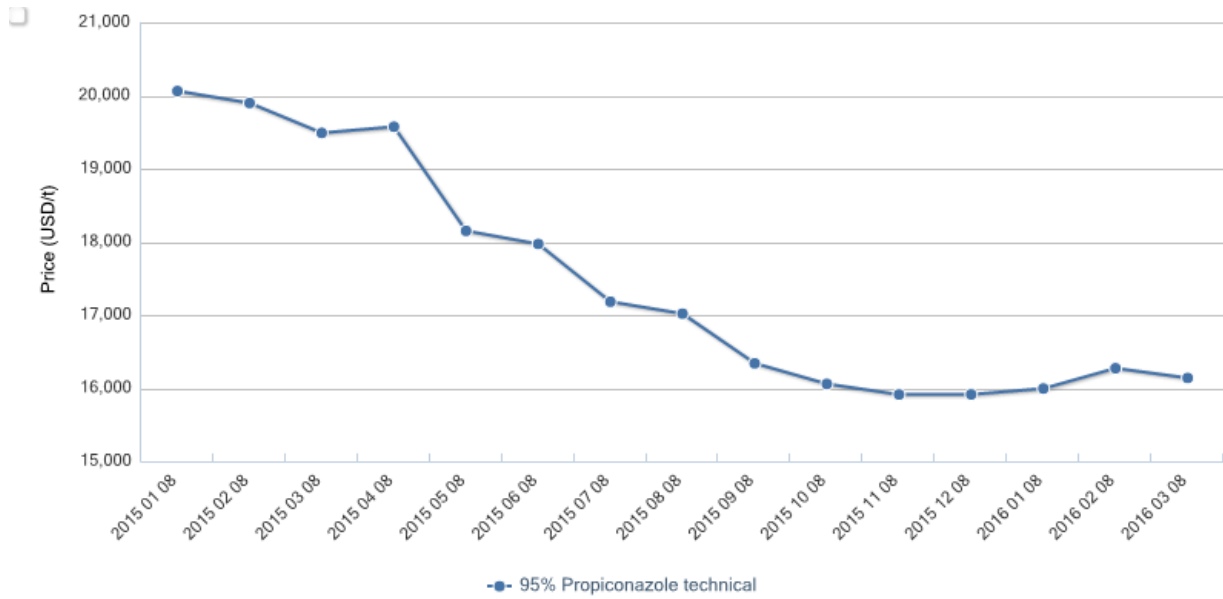


Source: CCM

## China's market price of propiconazol technical falls in March

According to CCM's price monitoring, China's market price of propiconazol technical began falling in March 2016. For instance, the average ex-works price of 95% propiconazol TC was USD16,144/t, down by USD131/t MoM. With the coming of spring ploughing, the demand will further increase. Moreover, before the Spring Festival, the supply got tight and technical producers received relatively more orders, which pulled up the price. However, as more manufacturers started production of propiconazol, the supply is getting sufficient.

Figure 6: Ex-works price of 95% propiconazole technical in China, Jan. 2015-March, 2016



Source: CCM

## Price Update

### Ex-works prices of main fungicides in China, Mar. 2016

Table 23: Ex-works prices of main fungicides in China, March 2016

No.	Product	20160208		20160308	
		RMB/t	USD/t	RMB/t	USD/t
1	96% Azoxystrobin Technical	191,000	29,326	189,000	29,059
2	98% Carbendazim technical (White color)	36,700	5,635	35,500	5,458
3	98% Chlorothalonil technical	31,000	4,760	33,000	5,074
4	98% Cymoxanil technical	52,500	8,061	52,500	8,072
5	95% Difenconazole technical	134,000	20,574	132,000	20,295
6	98% Dimethomorph technical	83,000	12,744	83,000	12,761
7	97% Epoxiconazole technical	360,000	55,274	360,000	55,350
8	95% Flusilazole technical	224,000	34,393	224,000	34,440
9	95% Hexaconazole technical	99,000	15,200	98,000	15,067
10	97% Hymexazol technical	118,000	18,118	118,000	18,142
11	95% Iprodione technical	142,000	21,803	140,000	21,525
12	97% Isoprothiolane technical	31,000	4,760	31,000	4,766
13	Mancozeb 80% WP	17,000	2,610	17,000	2,614
14	90% Mancozeb technical	18,500	2,840	18,500	2,844
15	98% Metalaxyl technical	88,000	13,511	88,000	13,530
16	97% Myclobutanil technical	115,000	17,657	115,000	17,681
17	97% Phosethyl Al technical	18,700	2,871	18,700	2,875
18	97% Prochloraz technical	60,500	9,289	58,500	8,994
19	98% Propamocarb technical	44,000	6,756	44,000	6,765
20	95% Propiconazole technical	106,000	16,275	105,000	16,144
21	85% Propineb technical	30,200	4,637	30,200	4,643
22	97% Tebuconazole technical	66,500	10,210	66,000	10,147
23	96% Thiophanate-methyl technical (White color)	28,000	4,299	28,000	4,305
24	97% Thiram technical	11,000	1,689	11,000	1,691
25	95% Triadimefon technical	43,500	6,679	43,000	6,611
26	95% Tricyclazole technical	47,000	7,216	46,000	7,072
27	96% Trifloxystrobin technical	585,000	89,820	585,000	89,943

Note: The content of hexamethylbenzene in 98% chlorothalonil technical is 40 ppm. Ex-works price includes VAT.

Source: CCM

### Shanghai Port prices of main fungicides in China, Mar. 2016

Table 24: Shanghai Port prices of main fungicides in China, March 2016

No.	Product	20160208		20160308	
		RMB/t	USD/t	RMB/t	USD/t
1	96% Azoxystrobin Technical	191,480	29,400	189,480	29,132
2	98% Carbendazim technical (White color)	37,180	5,709	35,980	5,532
3	98% Chlorothalonil technical	31,480	4,833	33,480	5,148
4	98% Cymoxanil technical	52,980	8,135	52,980	8,146
5	95% Difenconazole technical	134,480	20,648	132,480	20,369
6	98% Dimethomorph technical	83,480	12,817	83,480	12,835
7	97% Epoxiconazole technical	360,480	55,348	360,480	55,424
8	95% Flusilazole technical	224,480	34,466	224,480	34,514
9	95% Hexaconazole technical	99,480	15,274	98,480	15,141
10	97% Hymexazol technical	118,480	18,191	118,480	18,216
11	95% Iprodione technical	142,480	21,876	140,480	21,599
12	97% Isoprothiolane technical	31,480	4,833	31,480	4,840
13	95% Kresoxim-methyl benzene technical	243,480	37,384	243,480	37,435
14	Mancozeb 80% WP	17,480	2,684	17,480	2,688
15	90% Mancozeb technical	18,980	2,914	18,980	2,918
16	98% Metalaxyl technical	88,480	13,585	88,480	13,604
17	97% Myclobutanil technical	115,480	17,731	115,480	17,755
18	97% Phosethyl Al technical	19,180	2,945	19,180	2,949
19	97% Prochloraz technical	60,980	9,363	58,980	9,068
20	98% Propamocarb technical	44,480	6,829	44,480	6,839
21	95% Propiconazole technical	106,480	16,349	105,480	16,217
22	85% Propineb technical	30,680	4,711	30,680	4,717
23	97% Tebuconazole technical	66,980	10,284	66,480	10,221
24	96% Thiophanate-methyl technical (White color)	28,480	4,373	28,480	4,379
25	97% Thiram technical	11,480	1,763	11,480	1,765
26	95% Triadimefon technical	43,980	6,753	43,480	6,685
27	95% Tricyclazole technical	47,480	7,290	46,480	7,146
28	96% Trifloxystrobin technical	585,480	89,894	585,480	90,017

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 main fungicides in China, Mar. 2016

Table 25: FOB Shanghai prices of main fungicides in China, March 2016

No.	Product	20160208 USD/t	20160308 USD/t
1	96% Azoxystrobin Technical	27,669	27,418
2	98% Carbendazim technical (White color)	5,445	5,280
3	98% Chlorothalonil technical	4,803	5,110
4	98% Cymoxanil technical	8,023	8,034
5	95% Difenconazole technical	19,459	19,197
6	98% Dimethomorph technical	12,114	12,130
7	97% Epoxiconazole technical	52,010	52,081
8	95% Flusilazole technical	32,422	32,466
9	95% Hexaconazole technical	14,418	14,294
10	97% Hymexazol technical	17,155	17,178
11	95% Iprodione technical	20,611	20,351
12	97% Isoprothiolane technical	4,803	4,810
13	95% Kresoxim-methyl benzene technical	36,558	36,608
14	Mancozeb 80% WP	2,706	2,710
15	90% Mancozeb technical	2,931	2,935
16	98% Metalaxyl technical	12,834	12,852
17	97% Myclobutanil technical	16,723	16,746
18	97% Phosethyl Al technical	2,961	2,965
19	97% Prochloraz technical	8,873	8,597
20	98% Propamocarb technical	6,750	6,759
21	95% Propiconazole technical	15,426	15,303
22	85% Propineb technical	4,683	4,690
23	97% Tebuconazole technical	9,737	9,679
24	96% Thiophanate-methyl technical (White color)	4,354	4,360
25	97% Thiram technical	1,807	1,810
26	95% Triadimefon technical	6,425	6,361
27	95% Tricyclazole technical	6,929	6,794
28	96% Trifloxystrobin technical	87,786	87,906

Note: FOB Shanghai price considers factors of Shanghai Port price, port sur-charges, loading charges, traders' profits and export rebates. The shipment cost shall be paid by the buyer.

Source: CCM

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