



Crop Protection China Monthly Report

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Headline

In 2016, there were 271 pesticide technical (TK included) registered in China, decreasing by 36.24% compared with that in 2015. Among these registrations, 252 were official while the other 19 were temporary.

According to statistics from ICAMA, the 271 new registrations of pesticide technical in China were obtained by 139 enterprises, including 127 domestic and 12 foreign ones in 2016.

According to statistics from ICAMA, among the 271 registrations of pesticide technical in China in 2016, 12 were registered for the first time. Among the 12 pesticide technical, 8 were registered by multinational corporations and four were by domestic ones.

In 2016, there were 127 herbicide technical registered in China (excluding renewal registrations). Among them, there were 12 ingredients registered for more than 3 times, and 2,4-D, dicamba, glufosinate-ammonium, mesotrione and flumioxazin were all registered for more than five times.

In 2016, there were 47 insecticide technical registered in China (excluding renewal registrations), 41 were for agricultural insecticides and 6 for hygienic ones. And the 47 new registrations cover 37 active ingredients.

In 2016, there were 86 fungicide technical registered in China (excluding renewal registrations), covering a total of 47 active ingredients. And the number of both registrations and active ingredients of fungicide technical sharply decreased in 2016.





Editor note

According to data released by the ICAMA on 31 Dec., 2016, there were altogether 271 pesticide technical (TK included) registered in China (excluding renewal registrations) in 2016, decreasing by 36.24% compared with that in 2015.

Among the 271 registrations of pesticide technical, 252 were official and the other 19 were temporary. Herbicides were still the sub-category with the largest number of pesticide technical registered in China. And fungicides ranked second among the three major pesticides (herbicides, insecticides and fungicides) in 2016.

In 2016, 12 pesticide technical were firstly registered in China, including 4 herbicides, 4 insecticides and 4 fungicides.

The number of new registrations can show market trends to some extent. 2,4-D, dicamba, glufosinate-ammonium, mesotrione and flumioxazin are herbicides registered the most in 2016; thiamethoxam and nitenpyram are insecticides with the most registrations; and pyraclostrobin, boscalid, trifloxystrobin and epoxiconazole were the most commonly registered fungicides in 2016.

Jiangsu Good Harvest-Weien Agrochemical Co., Ltd., Zhejiang Heben Pesticide & Chemicals Co., Ltd. and Jiangsu LionChem Co., Ltd. were the most active registrants, obtaining a large number of registrations—11, 10 and 9 respectively in 2016.

It's worth noting that the number of new registrations obtained by foreign enterprises in 2016 was the same as that in 2015, while the number of new registrations obtained by domestic enterprises decreased sharply in 2016. What's more, among the 12 firstly registered pesticide technical, 8 were registered by multinational corporations and four were by domestic ones, which can be seen that foreign enterprises surpass domestic enterprises in the R&D of pesticide technical.



New registrations of pesticide technical in China in 2016

271 registrations of pesticide technical in China in 2016

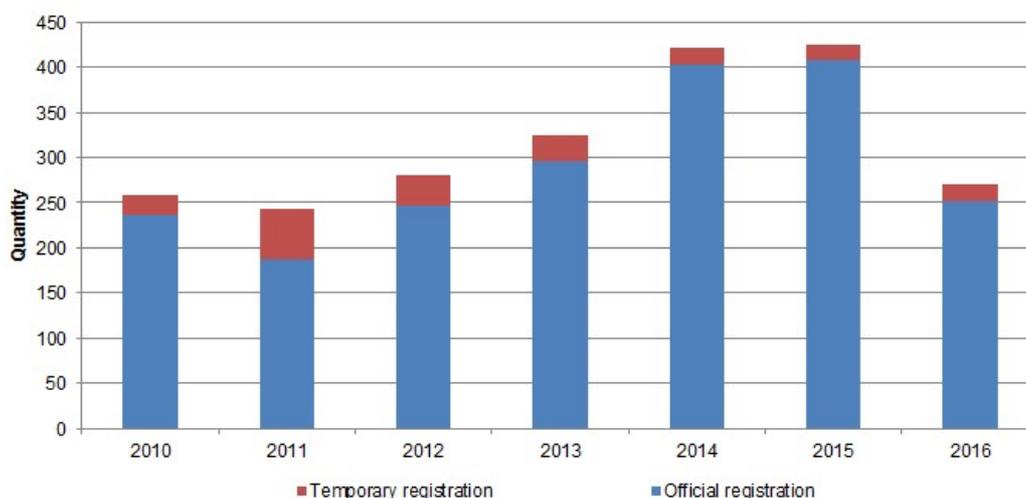
In 2016, there were 271 pesticide technical (TK included) registered in China, decreasing by 36.24% compared with that in 2015. Among these registrations, 252 were official while the other 19 were temporary.

In 2016, there were 271 pesticide technical (TK included) registered in China (excluding renewal registrations), according to data released by the Institute for the Control of Agrochemicals, Ministry of Agriculture (ICAMA) on 31 Dec., 2016. Among these registrations, 252 were official and the other 19 were temporary. The number of registrations of pesticide technical in 2016 decreased by 36.24% compared with that in 2015.

Herbicides were still the sub-category with the largest number of pesticide technical registered in China in 2016, accounting for 46.86% of the total.

It is worth noting that the 271 new registrations cover 158 pesticide ingredients, including 64 herbicide ingredients, 32 insecticide ingredients, 47 fungicide ingredients and some other ingredients such as plant growth regulators, rodenticides, acaricides, etc. Among them, 19 pyraclostrobin and 10 2,4-D were registered in 2016, accounting for 12.03% and 6.33% of the total, respectively.

Figure 1: Number of registrations of pesticide technical in China, 2010-2016



Note: All data in this figure are excluded renewal registrations.

Source: The Institute for the Control of Agrochemicals, Ministry of Agriculture (ICAMA)

Table 1: Number of registrations of pesticide technical in China by category, 2016

Category	Number of pesticide ingredient	Number of registration
Herbicides	64	127
Insecticides	32 (including 1 acaricides)	41 (including 1 acaricides)
Fungicides	47	86
Acaricides	2	3
Plant growth regulators	5	5
Molluscicides	1	1
Nematocides	1	1
Rodenticides	1	1
Hygienic insecticides	5	6
Total	158	271

Source: ICAMA & CCM

Table 2: Registrations of main pesticide ingredients in China, 2016

No.	Active ingredient	Category	Registration in 2016	Total valid registration, as of 31 Dec., 2016
1	Pyraclostrobin	Fungicides	19	45
2	2,4-D	Herbicides	10	44
3	Glufosinate-ammonium	Herbicides	8	36
4	Dicamba	Herbicides	8	35
5	Boscalid	Fungicides	7	19
6	Mesotrione	Herbicides	7	25
7	Trifloxystrobin	Fungicides	5	8
8	Thiamethoxam	Insecticides	5	60
9	Flumioxazin	Herbicides	5	9
10	Epoxiconazole	Fungicides	4	22
11	Florasulam	Herbicides	4	22

Source: ICAMA & CCM

139 registrants registering pesticide technical in China in 2016

According to statistics from ICAMA, the 271 new registrations of pesticide technical in China were obtained by 139 enterprises, including 127 domestic and 12 foreign ones in 2016.

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The geographic distribution of domestic registrants reflects the regional development difference in the pesticide industry in China. In 2016, the 127 domestic registrants hailed from a total of 22 different provinces and regions. In terms of the number of registrations and registrants, Jiangsu Province, Zhejiang Province, Shandong Province, Hebei Province, Jiangxi Province and Sichuan Province were the top six provinces in China. Among them, Jiangsu Province ranked first—48 enterprises obtained 107 registrations, accounting for 39.48% of the total registrations.

In 2016, Jiangsu Good Harvest-Weien Agrochemical Co., Ltd. (Jiangsu Good Harvest-Weien) registered 11 pesticide technical, with the most registrations among all registrants. And Zhejiang Heben Pesticide & Chemicals Co., Ltd. (Zhejiang Heben) ranked second with 10 technical, followed by Jiangsu LionChem Co., Ltd. (Jiangsu LionChem, 9 technical). In 2015, these three registrants were even not in the top ten among all registrants.

In 2016, seven Chinese listed pesticide enterprises registered 18 pesticide technical, including 7 herbicides, 1 insecticide, 8 fungicides, 1 hygienic insecticide and 1 plant growth regulator; and foreign enterprises registered 21 technical, including 9 herbicides, 4 insecticides and 8 fungicides.

Table 3: Number of registrations of pesticide technical in China by region, 2016

No.	Location	Number of registrant	Number of registration
1	Jiangsu Province	48	107
2	Zhejiang Province	9	25
3	Shandong Province	9	19
4	Hebei Province	9	16
5	Jiangxi Province	4	15
6	Sichuan Province	5	10
7	Other regions in China	43	58
8	Overseas	12	21
Total		139	271

Source: ICAMA & CCM

Table 4: Number of registrations of main pesticide technical in China by registrant, 2016

No.	Registrant	Location	Number of registration
1	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.	Jiangsu Province	11
2	Zhejiang Heben Pesticide & Chemicals Co., Ltd.	Zhejiang Province	10
3	Jiangsu LionChem Co., Ltd.	Jiangsu Province	9
4	Jiangsu Huifeng Agrochemical Co., Ltd.	Jiangsu Province	8
5	Ningxia Gerui Fine Chemical Co., Ltd.	Ningxia Hui Autonomous Region	7
6	Zhejiang Tianfeng Biological Science Co., Ltd.	Zhejiang Province	7
7	Shandong Weifang Rainbow Chemical Co., Ltd.	Shandong Province	6
8	Bayer CropScience AG	Germany	5
9	Shijiazhuang Xingbai Bio-engineering Co., Ltd.	Hebei Province	5
10	Huaian Guorui Chemical Co., Ltd.	Jiangsu Province	5
11	Jiangxi Tianyu Chemical Co., Ltd.	Jiangxi Province	5
12	Jiangxi Zhonghe Chemical Co., Ltd.	Jiangxi Province	5

Source: ICAMA & CCM

Table 5: Registrations of pesticide technical held by Jiangsu Good Harvest-Weien Agrochemical Co., Ltd., 2016

No.	Pesticide	Registration No.	Category	Content	Toxicity
1	Mesosulfuron-methyl	PD20161513	Herbicides	93%	Low
2	Triclopyr-butolyl	PD20161077	Herbicides	99%	Low
3	Florasulam	PD20160312	Herbicides	97%	Low
4	Thiamethoxam	PD20160475	Insecticides	98%	Low
5	Methoxyfenozone	PD20160199	Insecticides	98%	Low
6	Indoxacarb	PD20161106	Insecticides	71%	Low
7	Thifluzamide	PD20160846	Fungicides	97%	Low
8	Pyraclostrobin	PD20160613	Fungicides	98%	Low
9	Hexaconazole	PD20160597	Fungicides	95%	Low
10	Metaldehyde	PD20161441	Molluscicides	98%	Moderate
11	Spirodiclofen	PD20160200	Acaricides	98%	Low

Source: ICAMA & CCM

Table 6: Registrations of pesticide technical held by Zhejiang Heben Pesticide & Chemicals Co., Ltd., 2016

No.	Pesticide	Registration No.	Category	Content	Toxicity
1	Glufosinate-ammonium	PD20161159	Herbicides	95%	Low
2	Fluroxypyr-meptyl	PD20160593	Herbicides	96%	Low
3	Metribuzin	PD20160416	Herbicides	95%	Low
4	Nicosulfuron	PD20160101	Herbicides	95%	Low
5	Procymidone	PD20161194	Fungicides	98.5%	Low
6	Tricyclazole	PD20161235	Fungicides	95%	Moderate
7	Dimethomorph	PD20160391	Fungicides	96%	Low
8	Epoxiconazole	PD20160417	Fungicides	95%	Low
9	Myclobutanil	PD20160364	Fungicides	95%	Low
10	Pyraclostrobin	PD20160056	Fungicides	97.5%	Low

Source: ICAMA & CCM



Table 7: Registrations of pesticide technical held by Jiangsu LionChem Co., Ltd., 2016

No.	Pesticide	Registration No.	Category	Content	Toxicity
1	Quinclorac	PD20161547	Herbicides	96%	Low
2	Metribuzin	PD20160964	Herbicides	95%	Low
3	Bispyribac-sodium	PD20160848	Herbicides	95%	Low
4	Propanil	PD20160667	Herbicides	95%	Low
5	Cyhalofop-butyl	PD20160497	Herbicides	95%	Low
6	2,4-D	PD20160258	Herbicides	96%	Low
7	Ethoxysulfuron	PD20160292	Herbicides	95%	Low
8	Chlorfluazuron	PD20160857	Insecticides	96%	Low
9	Fosthiazate	PD20160443	Nematocides	93%	Low

Source: ICAMA & CCM

Table 8: Registrations of pesticide technical held by listed pesticide enterprises in China, 2016

No.	Registrant	Abbreviation	Quantity	Herbicide	Insecticide	Fungicide	Others
1	Hubei Sanonda Co., Ltd.	Hubei Sanonda	2	Glufosinate-ammonium, dicamba	/	/	/
2	Jiangsu Huifeng Agrochemical Co., Ltd.	Jiangsu Huifeng	8	MCPA-sodium	Fluazinam	Pyradostrobil, metalaxyl-M, flutriafol, prochloraz	Acrinathrin, trinexapac-ethyl
3	Jiangsu Lanfeng Biochemical Co., Ltd.	Jiangsu Lanfeng	2	/	/	Pyradostrobil, epoxiconazole	/
4	Nanjing Red Sun Biochemical Co., Ltd.	Red Sun Biochemical	2	Tricopyr-butotyl, mesotrione	/	/	/
5	Lier Chemical Co., Ltd.	Lier Chemical	2	Aminopyralid, flumioxazin	/	/	/
6	Limin Chemical Co., Ltd.	Limin Chemical	1	/	/	Cyprodinil	/
7	Nanjing Red Sun Co., Ltd.	Nanjing Red Sun	1	/	/	Fluazinam	/
Total			18		7	1	8
					1		2

Source: ICAMA & CCM

Table 9: Registrations of pesticide technical held by chief foreign pesticide enterprises in China, 2016

No.	Registrant	Quantity	Herbicide	Insecticide	Fungicide
1	Oro Agri SEZC Limited	1	/	/	D-limonene
2	BASF SE	1	/	/	Fluxapyroxad
3	Bayer CropScience AG	5	Isoxaflutole, thien carbazon-methyl	/	Flupyradifurone
4	MAX (Rudong) Chemicals Co., Ltd.	3	Flumioxazin, prodiamine, sulfometuron-methyl	/	Fluoxastrobin
5	DuPont USA	1	/	/	Oxathiapiprolin
6	Gowan Company, L.L.C.	1	/	/	Zoxamide
7	Dow AgroSciences LLC	4	Halaxifen-methyl	/	Sulfoxaflor
8	Kaken Pharmaceutical Industry Co., Ltd.	1	Pentoxazone	/	Fenbuconazole
9	Nissan Chemical Industries, Ltd.	1	/	/	Amisulbrom
10	Mitsui Chemicals, Inc.	1	/	/	Dinotefuran
11	Japan SDS Biotech K.K.	1	Benzobicyclon	/	/
12	Stockton (Israel) Ltd.	1	/	/	Terpenol
Total		21			9
					4
					8

Note: Fluoxastrobin was registered twice by Bayer CropScience AG in 2016. One was temporary registration and the other was official one.

Source: ICAMA & CCM

12 pesticide technical registered for the first time in China in 2016

According to statistics from ICAMA, among the 271 registrations of pesticide technical in China in 2016, 12 were registered for the first time. Among the 12 pesticide technical, 8 were registered by multinational corporations and four were by domestic ones.

According to statistics from ICAMA, among the 271 registrations of pesticide technical in China in 2016, 12 were registered for the first time, including thien carbazon-methyl, pyraclonil, pentoxazone, benzobicyclon, d-limonene, flupyradifurone, alkaloid of sophora alopecuroides L, metarhizium anisopliae CQMa421, fluoxastrobin, bacillus methylotrophicus 9912, amisulbrom and terpenol. Eight of them were registered by multinational corporations and four were by domestic ones.

Thien carbazon-methyl



Thiencarbazone-methyl is the herbicide developed by Bayer CropScience AG. It is an inhibitor for acetolactate synthetase that can be used for weeds in corn and other gramineous crops. Thiencarbazone-methyl was registered in Romania in 2008 and then in the US, Canada, Argentina and some other countries in Europe. Its patent will expire in July 2020 in Europe, the US and China.

Pyraclonil

Pyraclonil was firstly commercialized in Japan in 2008. It can be remixed with other pesticides and used widely in rice weed. In 2016, the registrations of pyraclonil technical and formulations were gained by Hubei Sowa Fine Chemical Co., Ltd.

Pentoxazone

Pentoxazone was firstly registered in Japan in 1997. In 2016, pentoxazone technical was registered by Kaken Pharmaceutical Industry Co., Ltd. in China.

Benzobicyclon

Benzobicyclon was firstly registered in Japan in 2001. It is a herbicide that can inhibit hydroxyphenyl pyruvate dioxygenase (HPPD). In 2016, both of benzobicyclon technical and formulations were registered by Japan SDS Biotech K.K. in China. Its patent expired in China in 2014.

D-limonene

In 2016, d-limonene technical and d-limonene 5% AS were registered by Oro Agri SEZC Limited in China. D-limonene existed in fruits, vegetables and spices and can be used as an insecticide to control Bemisia tabaci.

Flupyradifurone

In 2016, flupyradifurone technical was registered by Bayer CropScience AG in China. It is a kind of novel neonicotinoid insecticides.

Alkaloid of sophora alopecuraides L

In 2016, alkaloid of sophora alopecuraides L (TK) was registered by Inner Mogolia Erdos Jintuo Pharmaceutical Co., Ltd. in China. It is a botanical pesticide.

Metarhizium anisopliae CQMa421

In 2016, metarhizium anisopliae CQMa421 and its formulations (OD) were registered by Chongqing Julixin Biological Engineering Co., Ltd. in China.

Fluoxastrobin

In 2016, fluoxastrobin technical was registered twice by Bayer CropScience AG in China: one was temporary registration and the other was formal one. At present, fluoxastrobin has been registered in the US, the UK, Germany, Canada, Italy, Argentina and so on. Its patent was expired in Jan. 2017 in China and Europe. But, it patents in the UK was extended to Aug. 2019.

Bacillus methylotrophicus 9912

Bacillus methylotrophicus 9912 (BAC-9912), a new biological fungicide screened and isolated by the Institute of Applied Ecology, Chinese Academy of Science, was registered by North China Pharmaceutical Group Aino Co., Ltd. in China in 2016. Field experiments proved that its control efficacy is remarkable for cucumber gray mold.

Amisulbrom

In 2016, amisulbrom was registered by Nissan Chemical Industries, Ltd. in China. It can inhibit fungus respiration and spore germination. Amisulbrom has been registered in the UK, South Korea, Japan, Vietnam and some other countries in Europe. Its patent in the US and China will be expired in Oct. 2018.

Terpenol

In 2016, terpenol TK and formulations were registered by Stockton (Israel) Ltd. in China. It can control strawberry powdery mildew and tomato early blight.

Table 10: Registrations of pesticide technical registered for the first time in China, 2016

No.	Registration No.	Active ingredient	Content	Category	Targeted crop	Target	Toxicity	Registrant
1	PD20160358	Thiencarbazone-methyl	98%	Herbicides	Corn	Annual weed	Low	Bayer CropScience AG
2	LS20160302	Pyradonil	97%	Herbicides	Rice	Annual weed	Low	Hubei Sowa Fine Chemical Co., Ltd.
3	LS20160105	Pentoxazone	97%	Herbicides	Rice	Annual weed	Low	Kaken Pharmaceutical Industry Co., Ltd.
4	LS20160123	Benzobicyclon	98%	Herbicides	Rice	Annual weed	Low	Japan SDS Biotech K.K.
5	LS20160240	D-limonene	92%	Insecticides	Tomato	Bemisia tabaci	Low	Oro Agri SEZC Limited
6	LS20160381	Flupyradifurone	96%	Insecticides	Tomato	Bemisia tabaci	Low	Bayer CropScience AG
7	LS20160250	Alkaloid of sophora alopecuraides L	20%	Insecticides	Cabbage	Aphid	Low	Inner Mongolia Erdos Jintuo Pharmaceutical Co., Ltd.
8	LS20160359	Metarhizium anisopliae CQMa421	15 billion spores/g	Insecticides	Rice	Rice plant hopper, rice leaf roller	Slight	Chongqing Julixin Biological Engineering Co., Ltd.
9	PD20161248	Fluoxastrobin	94%	Fungicides	Tomato, cucumber	tomato late blight, cucumber downy mildew	Low	Bayer CropScience AG
10	LS20160012	Bacillus methylotrophicus 9912	4 billion live spores/g	Fungicides	Cucumber	Cucumber gray mold	Slight	North China Pharmaceutical Group Aino Co., Ltd.
11	LS20160084	Amisulbrom	97.5%	Fungicides	Cucumber, potato	Cucumber downy mildew, potato late blight	Low	Nissan Chemical Industries, Ltd.
12	LS20160418	Terpenol	40.2%	Fungicides	Strawberry, tomato	Strawberry powdery mildew, tomato early blight	Low	Stockton (Israel) Ltd.

Note: Fluoxastrobin was registered twice by Bayer CropScience AG in 2016. One was temporary registration and the other was official one.

Source: ICAMA & CCM

New registrations of herbicide technical in China in 2016

In 2016, there were 127 herbicide technical registered in China (excluding renewal registrations). Among them, there were 12 ingredients registered for more than 3 times, and 2,4-D, dicamba, glufosinate-ammonium, mesotrione and flumioxazin were all registered for more than five times.

According to statistics from ICAMA, there were 127 herbicide technical registered in China (excluding renewal registrations) in 2016. Among them, there were 12 ingredients registered for more than three times, and 2,4-D, dicamba, glufosinate-ammonium, mesotrione and flumioxazin were all registered for more than five times.

2,4-D technical was the herbicide registered the most in 2016—10 registrants acquired 10 new registrations. As of 31 Dec., 2016,



there were 44 valid registrations of 2,4-D technical in China. In 2016, the capacity of 2,4-D technical was about 119,300 t/a, increasing by 32.85% compared with that in 2015. Paraquat AS withdrew from China's market since 1 July, 2016, which could promote the development of other good substitutes for paraquat to some extent, such as glufosinate-ammonium and dicamba. In 2016, both dicamba and glufosinate-ammonium were registered for eight times. In addition, mesotrione and flumioxazin were registered for seven and five times respectively.

In 2016, four herbicides were registered for the first time in China, including thiencazuron-methyl, pyraclonil, pentoxazone and enzobicyclon.

In 2016, 69 enterprises obtained registrations for herbicide technical in China. Both Jiangsu LionChem Co., Ltd. and Ningxia Gerui Fine Chemical Co., Ltd. registered seven herbicide technical, ranking first among all registrants, followed by Huaian Guorui Chemical Co., Ltd. and Jiangxi Zhonghe Chemical Co., Ltd.

Table 11: Number of registrations of herbicide technical in China, 2012-2016

Item	2012	2013	2014	2015	2016
Herbicide AI	70	76	77	77	64
Number of registration	111	156	157	164	127
Registrant	75	83	76	87	69

Note: AI is the abbreviation of active ingredient, the same hereinafter.

Source: ICAMA & CCM



Table 12: Registrations of main herbicide technical in China by product, 2016

No.	Herbicide	Registration No.	Content	Toxicity	Registrant
1	2,4-D	PD20160117	98%	Moderate	Anhui Zhongshan Chemical Co., Ltd.
2		PD20160947	96%	Low	Jiangsu CF Agrochemical Co., Ltd.
3		PD20160304	96%	Low	Jiangsu Jiangnan Agrochemical Co., Ltd.
4		PD20160258	96%	Low	Jiangsu LionChem Co., Ltd.
5		PD20160636	98%	Low	Jiangxi Tianyu Chemical Co., Ltd.
6		PD20160262	98%	Low	CAC Nantong Chemical Co., Ltd.
7		PD20161007	96%	Low	Ningxia Wynca Chemical Technology Co., Ltd.
8		PD20161082	98%	Low	Shandong Lvfeng Pesticide Co., Ltd.
9		PD20161171	98%	Low	Fuhua Tongda Agro-chemical Technology Co., Ltd.
10		PD20160025	96%	Low	Zhejiang Bosst CropScience Co., Ltd.
11		PD20161567	98%	Low	Henan HDF Chemical Co., Ltd.
12	PD20160805	98%	Low	Hubei Sanonda Co., Ltd.	
13	PD20160795	98%	Low	Hunan Haili Chemical Industry Co., Ltd.	
14	PD20160195	98%	Low	Changshu Pesticide Factory Co., Ltd.	
15	PD20161153	98%	Low	Jiangsu Tuojiu Agriculture Chemical Co., Ltd.	
16	PD20161114	98%	Low	Jiangxi Zhonghe Chemical Co., Ltd.	
17	PD20161051	98%	Low	Ningxia Gerui Fine Chemical Co., Ltd.	
18	PD20160204	98%	Low	Yancheng Huihuang Chemical Co., Ltd.	
19	PD20161110	95%	Low	Hubei Sanonda Co., Ltd.	
20	PD20160725	95%	Low	Hunan Haili Chemical Industry Co., Ltd.	
21	PD20161177	95%	Low	Huaian Guorui Chemical Co., Ltd.	
22	PD20160960	95%	Low	Jiangsu Lianyungang Liben Agro-chemical Co., Ltd.	
23	PD20161115	95%	Low	Jiangxi Zhonghe Chemical Co., Ltd.	
24	PD20160464	95%	Low	Inner Mongolia Jiaruimi Fine Chemical Co., Ltd.	
25	PD20160655	95%	Low	Shandong Weifang Rainbow Chemical Co., Ltd.	
26	PD20161159	95%	Low	Zhejiang Heben Pesticide & Chemicals Co., Ltd.	
27	PD20161366	95%	Low	Daqing Jefene Bio-chemical Co., Ltd.	
28	PD20160803	98%	Slight	Jiangsu Bailing Agrochemical Co., Ltd.	
29	PD20160500	97%	Low	Nanjing Red Sun Biochemical Co., Ltd.	
30	PD20161614	95%	Slight	Jiangsu Yangnong Chemical Co., Ltd.	
31	PD20161558	97%	Low	Ningxia Gerui Fine Chemical Co., Ltd.	
32	PD20160649	97%	Low	Shandong Weifang Rainbow Chemical Co., Ltd.	
33	PD20161037	98%	Low	Zhejiang Tianfeng Biological Science Co., Ltd.	
34	PD20160889	99.2%	Low	Jiangxi Tianyu Chemical Co., Ltd.	
35	PD20161189	99.2%	Low	Jingbo Agrochemicals Technology Co., Ltd.	
36	PD20160295	99.2%	Low	Lier Chemical Co., Ltd.	
37	PD20160880	99.2%	Slight	MAX (Rudong) Chemicals Co., Ltd.	
38	PD20161576	99.2%	Low	Ningxia Gerui Fine Chemical Co., Ltd.	

Source: ICAMA & CCM

Table 13: Number of registrations of main herbicide technical in China, as of 31 Dec., 2016

Herbicide	Before 2012	2012	2013	2014	2015	2016	Total valid registration, as of 31 Dec., 2016
2,4-D	20	3	5	3	3	3	44
Dicamba	17	0	6	3	7	8	41
Glufosinate-ammonium	19	1	14	7	9	8	58
Mesotrione	9	2	7	1	6	7	32
Flumioxazin	0	1	1	1	1	5	9

Source: ICAMA & CCM

Table 14: Registrations of main herbicide technical held by major companies in China, 2016

No.	Registrant	Herbicide	Registration in 2016	Total registration, as of 31 Dec., 2016
1	Jiangsu LionChem Co., Ltd.	Quinclorac, metribuzin, bispyribac-sodium, propanil, cyhalofop-butyl, 2,4-D, ethoxysulfuron, thifensulfuron-methyl, bensulfuron-methyl, pyrazosulfuron-ethyl, 2,4-D-ethylhexyl	7	11
2	Ningxia Gerui Fine Chemical Co., Ltd.	Flumioxazin, imazethapyr, mesotrione, boscalid, ametryn, propanil, dicamba, glyphosate	7	8
3	Huaian Guorui Chemical Co., Ltd.	Penoxsulam, glufosinate-ammonium, carfentrazone-ethyl, clodinafop-propargyl, flumetsulam, sulcotrione, dicamba, mesotrione, fenoxaprop-P-ethyl, bispyribac-sodium, fluroxypyr-meptyl, picloram, florasulam	5	13
4	Jiangxi Zhonghe Chemical Co., Ltd.	Carfentrazone-ethyl, dicamba, glufosinate-ammonium, amicarbazone, flufenacet	5	5
5	Jiangsu Agrochem Laboratory Co., Ltd.	Quizalofop-P-ethyl, halosulfuron-methyl, metribuzin, tralkoxydim, glufosinate-ammonium, bentazone, 2,4-D-ethylhexyl, florasulam	4	29
6	Jiangxi Tianyu Chemical Co., Ltd.	2,4-D-ethylhexyl, metribuzin, flumioxazin, 2,4-D	4	4
7	Fuhua Tongda Agrochemical Technology Co., Ltd.	2,4-D, glufosinate-ammonium, s-metolachlor, dicamba, mesotrione, bentazone, acetochlor, fluroxypyr-meptyl, glyphosate	4	13
8	Zhejiang Heben Pesticide & Chemicals Co., Ltd.	Glufosinate-ammonium, fluroxypyr-meptyl, metribuzin, nicosulfuron, mesotrione, dicamba, s-metolachlor, florasulam, clethodim, pendimethalin, clomazone	4	11

Source: ICAMA & CCM

New registrations of insecticide technical in China in 2016

In 2016, there were 47 insecticide technical registered in China (excluding renewal registrations), 41 were for agricultural insecticides and 6 for hygienic ones. And the 47 new registrations cover 37 active ingredients.

According to statistics from ICAMA, there were 47 insecticide technical registered in China (excluding renewal registrations) in 2016, 41 were for agricultural insecticides and 6 for hygienic ones.

In 2015, among the 102 registrations of insecticide technical, 98 were for agricultural insecticides and 4 for hygienic ones. Obviously, the number of registrations of agricultural insecticides in 2016 was largely reduced compared with that in 2015.

In 2016, registrations of insecticide technical mainly focused on two active ingredients: thiamethoxam and nitenpyram – amounted to 8, accounting for 17.02% of the total. The other 35 active ingredients had 39 new registrations.

Thiamethoxam, whose patent expired in mid-2013 in China, was the insecticide technical registered the most in China in the past four years (2013-2016), even though the number of new registrations of thiamethoxam in 2016 fell a lot compared with that in 2015. As of 31 Dec., 2016, there were 61 valid registrations of thiamethoxam technical in China.

In 2016, another insecticide technical–nitenpyram was registered for three times, ranking second. Before 2012, there were only 10 nitenpyram technical registered in China. In 2015, six registrations were added. As of 31 Dec., 2016, there were 22 valid registrations of nitenpyram technical in China.

In 2016, 36 enterprises obtained registrations of insecticide technical in China. Among them, Jiangsu Good Harvest-Weien Agrochemical Co., Ltd. and Shandong United Pesticide Industry Co., Ltd. both ranked first, with three registrations of the product.



Table 15: Number of registrations of insecticide technical in China, 2012-2016

Year	Item	Agricultural insecticide	Hygienic insecticide	Total
2012	AI	51	7	58
	Number of registration	83	10	93
	Registrant	60	10	58
2013	AI	36	10	45
	Number of registration	81	11	92
	Registrant	61	8	67
2014	AI	40	5	46
	Number of registration	117	9	126
	Registrant	76	7	78
2015	AI	35 (including 2 acaricides)	4	38
	Number of registration	98 (including 2 acaricides)	4	102
	Registrant	73	4	76
2016	AI	32 (including 1 acaricides)	5	37
	Number of registration	41 (including 1 acaricides)	6	47
	Registrant	31	5	36

Source: ICAMA & CCM

Table 16: Registrations of main insecticide technical in China by product, 2016

No.	Insecticide	Registration No.	Content	Toxicity	Registrant
1	Thiamethoxam	PD20160475	98%	Low	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.
2		PD20161044	98%	Low	Jiangsu Sword Agrochemicals Co., Ltd.
3		PD20160089	98%	Low	Jiangsu Lianyungang Liben Agro-chemical Co., Ltd.
4		PD20160091	98%	Low	Lianyungang Avilive Chemical Co., Ltd.
5		PD20160446	98%	Slight	Zhengzhou Labor Agrochemicals Co., Ltd.
6	Nitenpyram	PD20161233	97%	Low	Jiangsu Weunite Fine Chemical Co., Ltd.
7		PD20160740	95%	Low	Shijiazhuang Richem Co., Ltd.
8		PD20161154	97%	Low	Suzhou Bianjing Agro-Biochemical Co., Ltd.
9	Indoxacarb	PD20161106	71%	Low	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.
10		PD20160788	72%	Moderate	Jiangsu Xinnong Chemical Co., Ltd.
11	Methoxyfenozide	PD20160199	98%	Low	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.
12		PD20160232	98%	Low	Jiangsu Yangnong Chemical Co., Ltd.
13	Acrinathrin	WL20160005	96%	Low	Jiangsu Huifeng Agrochemical Co., Ltd.
14		WP20160023	95%	Slight	Youth Chemical Co., Ltd.
15	Chlorpyrifos	PD20160481	98%	Moderate	Shandong Huayang Hele Pesticides Co., Ltd.
16		PD20160753	98%	Moderate	Shandong United Pesticide Industry Co., Ltd.

Source: ICAMA & CCM

Table 17: Number of registrations of main insecticide technical in China, as of 31 Dec., 2016

Insecticide	Before 2012	2012	2013	2014	2015	2016	Total valid registration, as of 31 Dec., 2016	
Thiamethoxam		2	6	15	21	12	5	61
Nitenpyram		10	0	2	1	6	3	22
Indoxacarb		108	5	3	4	6	2	128
Methoxyfenozide		0	1	1	4	5	2	13
Acrinathrin		0	0	0	0	0	2	2
Chlorpyrifos		64	2	2	1	1	2	72

Source: ICAMA & CCM



Table 18: Registrations of main insecticide technical held by major companies in China, 2016

No.	Registrant	Insecticide	Registration in 2016	Total registration, as of 31 Dec., 2016
1	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.	Thiamethoxam, methoxyfenozide, phoxim, malathion, triazophos, pymetrozine	3	7
2	Shandong United Pesticide Industry Co., Ltd.	Profenofos, chlorfenapyr, chlorpyrifos, pymetrozine, thiacloprid, nitenpyram, emamectin benzoate, methoxyfenozide, fenpyroximate, imidacloprid, bifenthrin, acetamiprid, thiamethoxam	3	13
3	Jiangsu Rotam Chemistry Co., Ltd.	Abamectin, triflumuron, thiodicarb, lambda-cyhalothrin, imidacloprid, thiamethoxam	2	6
4	Shijiazhuang Xingbai Bio-engineering Co., Ltd.	Metaflumizone, bifenazate, chlorfenapyr, emamectin benzoate, abamectin, spinosad, thiamethoxam, spiroticlofen	2	8
5	Suzhou Bianjing Agro-Biochemical Co., Ltd.	Nitenpyram, acetamiprid, thiamethoxam, imidacloprid	2	4
6	Youth Chemical Co., Ltd.	Cyfluthrin, bifenthrin, thiamethoxam, fipronil, acetamiprid, pymetrozine, beta-cypermethrin, imidacloprid, deltamethrin, lambda-cyhalothrin, cypermethrin, indoxacarb	2	12

Source: ICAMA & CCM

New registrations of fungicide technical in China in 2016

In 2016, there were 86 fungicide technical registered in China (excluding renewal registrations), covering a total of 47 active ingredients. And the number of both registrations and active ingredients of fungicide technical sharply decreased in 2016.

According to statistics from ICAMA, there were 86 fungicide technical registered in China (excluding renewal registrations) in 2016, covering 47 active ingredients. Though the number of both registrations and active ingredients of fungicide technical sharply decreased in 2016, fungicides were still the sub-category with the second largest number of pesticide technical registered in China in 2015 and 2016. Before 2015, the number of registrations of fungicide technical ranked third.

In 2016, there were 19 pyraclostrobin technical registered in China, accounting for 22.09% of the total, followed by boscalid, trifloxystrobin and epoxiconazole, with six, five and four new registrations respectively. Azoxystrobin and thifluzamide technical each got three new registrations respectively in China in 2016.

In 2016, 60 enterprises obtained registrations for fungicide technical in China. Zhejiang Heben Pesticide & Chemicals Co., Ltd. registered six varieties, ranking first among all registrants, followed by Jiangsu Huifeng Agrochemical Co., Ltd., Jiangxi Oushi Chemical Co., Ltd. and Zhejiang Tianfeng Biological Science Co., Ltd., with four new registrations respectively.

Table 19: Number of registrations of fungicide technical in China, 2012-2016

Item	2012	2013	2014	2015	2016
Fungicide AI	39	32	42	55	47
Number of registration	69	66	113	134	86
Registrant	54	53	73	85	60

Source: ICAMA & CCM

Table 20: Registrations of main fungicide technical in China by product, 2016

No.	Fungicide	Registration No.	Content	Toxicity	Registrant
1	Pyraclostrobin	PD20160024	98%	Low	Chengdu Jinpai Agrochemical Co., Ltd.
2		PD20160826	97.5%	Moderate	Hebei Shuangji Chemical Co., Ltd.
3		PD20161470	97.5%	Moderate	Hunan Haili Chemical Industry Co., Ltd.
4		PD20160512	98%	Moderate	Jiangsu Bailing Agrochemical Co., Ltd.
5		PD20160588	97.5%	Moderate	Jiangsu Futian Agricultural Chemical Co., Ltd.
6		PD20160613	98%	Low	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.
7		PD20161066	98%	Low	Jiangsu Huifeng Agrochemical Co., Ltd.
8		PD20160955	98%	Moderate	Jiangsu Jinghong Biological Technology Co., Ltd.
9		PD20161180	98%	Low	Jiangsu Lanfeng Biochemical Co., Ltd.
10		PD20160316	97.5%	Low	Jiangsu Xinnong Chemical Co., Ltd.
11		PD20160760	97.5%	Moderate	Huludao Lingyun Group Pesticide & Chemicals Co., Ltd.
12		PD20160938	98%	Moderate	CAC Nantong Chemical Co., Ltd.
13		PD20161178	98%	Moderate	Shandong United Pesticide Industry Co., Ltd.
14		PD20160683	97.5%	Moderate	Shaanxi Andreap Biochemistry Co., Ltd.
15		PD20160271	98%	Moderate	Shaanxi Xiannong Biology Science Co., Ltd.
16		PD20160306	97.5%	Low	Shanghai High Victory Fine Chemical Co., Ltd.
17		PD20160508	97.5%	Low	Shijiazhuang Richem Co., Ltd.
18		PD20161623	97.5%	Low	Shangyu Yongnong Chem. Ind. Co., Ltd.
19		PD20160056	97.5%	Low	Zhejiang Heben Pesticide & Chemicals Co., Ltd.
20	Boscalid	PD20160120	98%	Slight	Chengdu Jinpai Agrochemical Co., Ltd.
21		PD20161493	98%	Slight	Hebei Lansheng Bio-technology Co., Ltd.
22		PD20160910	98%	Low	Jiangsu Sevencontinent Green Chemical Co., Ltd.
23		PD20160770	96%	Low	Jiangsu Yangnong Chemical Co., Ltd.
24		PD20161043	98%	Low	Jiangxi Tianyu Chemical Co., Ltd.
25	PD20160609	98%	Slight	Rudong Zhongyi Chemical Co., Ltd.	
26	PD20160033	97%	Slight	Jiangsu Frey Agrochemicals Co., Ltd.	
27	PD20160505	98%	Slight	Jiangsu Sevencontinent Green Chemical Co., Ltd.	
28	Trifloxystrobin	PD20160392	98%	Low	Jiangxi Oushi Chemical Co., Ltd.
29		PD20160652	98%	Low	Shanghai Yuelian Chemical Co., Ltd.
30		PD20161167	97.5%	Low	Zhejiang Bosst CropScience Co., Ltd.
31	Epoxiconazole	PD20160793	97%	Low	Jiangsu Lanfeng Biochemical Co., Ltd.
32		PD20161622	92%	Low	Shanxi Green Sea Pesticide Technology Co., Ltd.
33		PD20160417	95%	Low	Zhejiang Heben Pesticide & Chemicals Co., Ltd.
34		PD20160616	95%	Low	Zhejiang Tianfeng Biological Science Co., Ltd.
35	PD20160257	98%	Low	Jiangsu Lianyungang Liben Agro-chemical Co., Ltd.	
36	Azoxystrobin	PD20160287	93%	Low	Jiangxi Oushi Chemical Co., Ltd.
37		PD20160878	98.6%	Low	Ningbo Sunjoy Cropscience Co., Ltd.
38	Thiifuzamide	PD20160057	98%	Slight	Beijing Yoloo Biological Technology Co., Ltd.
39		PD20160846	97%	Low	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.
40		PD20160040	96%	Low	Zhejiang Tianfeng Biological Science Co., Ltd.

Source: ICAMA & CCM

Table 21: Number of registrations of main fungicide technical in China, as of 31 Dec., 2016

Fungicide	Before 2012	2012	2013	2014	2015	2016	Total valid registration, as of 31 Dec., 2016
Pyraclostrobin	2	0	0	0	25	19	46
Boscalid	1	0	0	2	9	6	18
Trifloxystrobin	2	0	0	0	1	5	8
Epoxiconazole	3	2	4	6	2	4	21
Azoxystrobin	4	22	18	20	9	3	76
Thiifuzamide	1	1	4	7	3	3	19

Source: ICAMA & CCM

Table 22: Registrations of main fungicide technical held by major companies in China, 2016

No.	Registrant	Fungicide	Registration in 2016	Total registration, as of 31 Dec., 2016
1	Zhejiang Heben Pesticide & Chemicals Co., Ltd.	Procyimidone, tricyclazole, fentin acetate, dimethomorph, epoxiconazole, myclobutanil, pyraclostrobin, cyazofamid, boscalid, penconazole, thiabendazole, fludioxonil, oxadixyl, metalaxyl-M, azoxystrobin, metalaxyl, pyrimethanil, propamocarb hydrochloride, flusilazole, propiconazole, fentin hydroxide	6	21
2	Jiangsu Hui Feng Agrochemical Co., Ltd.	Dithianon, metalaxyl-M, pyraclostrobin, dimethomorph, flutriafol, prochloraz, benziythiazolinone, carbendazim, azoxystrobin, dimethomorph, carboxin, iprodione, prochloraz, prochloraz-manganese chloride complex, epoxiconazole	4	15
3	Jiangxi Oushi Chemical Co., Ltd.	Trifloxystrobin, azoxystrobin, kresoxim-methyl, captan	4	4
4	Zhejiang Tianfeng Biological Science Co., Ltd.	Thiabendazole, epoxiconazole, thifluzamide, iprodione, pyraclostrobin, difenoconazole, azoxystrobin	4	7
5	Jiangsu Good Harvest-Weien Agrochemical Co., Ltd.	Thifluzamide, tebuconazole, pyraclostrobin, hexaconazole, myclobutanil, pyrimethanil	3	6

Source: ICAMA & CCM

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