

# **86 Chinese Independent Innovation Pesticides from 1995 to Nov. 2016**

**The Second Edition**

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## Contents

<b>Executive summary</b> .....	1
<b>Methodology</b> .....	2
<b>1 Research unit overview of novel pesticides in China</b> .....	5
<b>2 33 Pesticide active ingredients in China within the period of validity</b> .....	8
<b>2.1 18 Fungicides</b> .....	8
<b>2.2 11 Insecticides</b> .....	18
<b>2.3 4 Herbicides</b> .....	25
<b>3 21 Pesticide active ingredients in China which have been expired</b> .....	28
<b>3.1 8 Fungicides</b> .....	28
<b>3.2 6 Insecticides</b> .....	31
<b>3.3 3 Herbicides and 4 plant growth regulators</b> .....	33
<b>4 32 Pesticide active ingredients in China which have not been registered yet</b> .....	35
<b>4.1 17 Fungicides</b> .....	35
<b>4.2 8 Insecticides</b> .....	40
<b>4.3 7 Herbicides</b> .....	41

### LIST OF TABLES

Table 1-1 Numbers of 86 novel pesticides in China by research unit, 1995-Nov. 2016
Table 2.1-1 Basic information of major novel fungicides in China within the period of validity, 2002–16 Nov., 2016
Table 2.1-2 Market dynamics of major novel fungicides in China within the period of validity, 2002–16 Nov., 2016
Table 2.2-1 Basic information of major novel insecticides in China within the period of validity, 2002–16 Nov., 2016
Table 2.2-2 Market dynamics of major novel insecticides in China within the period of validity, 2002–16 Nov., 2016
Table 2.3-1 Basic information of major novel herbicides in China within the period of validity, 2002–16 Nov., 2016
Table 2.3-2 Market dynamics of major novel herbicides in China within the period of validity, 2002–16 Nov., 2016
Table 3.1-1 Major novel fungicides in China whose registration have been expired, 2002-16 Nov., 2016
Table 3.2-1 Major novel insecticides in China whose registration have been expired, 2002-16 Nov., 2016
Table 3.3-1 Major novel herbicides and plant growth regulators in China whose registration have been expired, 2002-16 Nov., 2016
Table 4.1-1 Part of potential fungicide active ingredients in China which may be registered, as of 16 Nov., 2016
Table 4.2-1 Part of potential insecticide active ingredients in China which may be registered, as of 16 Nov., 2016
Table 4.3-1 Part of potential herbicide active ingredients in China which may be registered, as of 16 Nov., 2016

### LIST OF FIGURES

Figure 1-1 Comparison of numbers of registered novel pesticides in different research units in China by property, 1995–Nov. 2016
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## 1. Methodology

The report is drafted by diverse methods as follows:

- Desk research

The sources of desk research are various, including published magazines, journals, government statistics, industrial statistics, association seminars as well as information from the Internet. A lot of work has gone into the compilation and analysis of the obtained information.

- Internet

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

- Data processing and presentation

The data collected and compiled are sourced from:

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

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

*Note: The exchange rate used in this report: USD/RMB=6.2272*

Table Full name and abbreviation list of part of companies or research institutes

No.	Full name	Abbreviation
1	Zhongshan Lanju Daily Chemical Industrial Co., Ltd.	Zhongshan Lanju
2	Zhejiang Xinnong Chemical Co., Ltd.	Zhejiang Xinnong
3	Zhejiang Longwan Chemicals Co., Ltd.	Zhejiang Longwan
4	Zhejiang Hetian Chemical Co., Ltd.	Zhejiang Hetian
5	Zhejiang Dongfeng Chem. Ind Co., Ltd.	Zhejiang Dongfeng
6	Youth Chemical Co., Ltd.,	Youth Chemical
7	Wuhan Zhongxin Chemical Co., Ltd.	Wuhan Zhongxin
8	Wuhan Wangs Chemicals Co., Ltd.	Wuhan Wangs
9	Tianjin Green Agrochemical S&T Co., Ltd.	Tianjin Green
10	Sichuan Chemical Engineering Design Institute	SCEDI
11	Shenzhen Noposion Agrochemicals Co., Ltd.	Shenzhen Noposion
12	Shenyang Sciencreat Chemicals Co., Ltd.	Shenyang Sciencreat
13	Shanxi Pingyao Tenglong Science and Technology Co., Ltd.	Pingyao Tenglong
14	Shanghai Nongle Biological Products Co., Ltd.	Shanghai Nongle
15	Shanghai Shengnong Pesticide Co., Ltd.	Shanghai Shengnong

No.	Full name	Abbreviation
16	Shanghai Nanshen Science & Technology Development Co., Ltd.	Shanghai Nanshen
17	Shandong United Pesticide Industry Co., Ltd.	Shandong United
18	Shandong Sino-Agri United Biotechnology Co., Ltd.	Shandong Sino-Agri
19	Shandong Qiaochang Modern Agriculture Co., Ltd.	Shandong Qiaochang Modern Agriculture
20	Shandong Qiaochang Chemical Co., Ltd.	Shandong Qiaochang
21	Shandong Harvest Bio-technology Co., Ltd.	Shandong Harvest
22	Shandong Cynda Chemical Co., Ltd.	Shandong Cynda
23	Shaanxi Yangling Pesticide Chemical Co., Ltd.	Shaanxi Yangling
24	Shaanxi Sunger Road Bio-Science Co., Ltd.	Shaanxi Sunger Road
25	Shaanxi Royal Crop Science Co., Ltd.	Shaanxi Royal
26	Shaanxi Biaozheng Crop Science Co., Ltd.	Shaanxi Biaozheng
27	Rosi Chemical Co., Ltd.	Rosi Chemical
28	Qingdao King Agroot Resistant Weeds Control Co., Ltd.	Qingdao King Agroot
29	Poror Group	Poror Group
30	Nantong Jiangshan Agrochemical & Chemicals Co., Ltd.	Nantong Jiangshan
31	Liuzhou Haobang Daily Chemical Co., Ltd.	Liuzhou Haobang
32	Lier Chemical Co., Ltd.	Lier Chemical
33	Jilin Bada Pesticide Co., Ltd.	Jilin Bada
34	Jiangxi Zhengbang Biochemical Industry Co., Ltd.	Jiangxi Zhengbang
35	Jiangsu Yangnong Chemical Co., Ltd.	Jiangsu Yangnong
36	Jiangsu Xinnong Chemical Co., Ltd.,	Jiangsu Xinnong
37	Jiangsu Tenglong Biological & Medicinal Co., Ltd.	Jiangsu Tenglong
38	Jiangsu Sevencontinent Green Chemical Co., Ltd.	Jiangsu Sevencontinent
39	Jiangsu Sanxiao Group Co., Ltd.	Jiangsu Sanxiao
40	Jiangsu Mindleader Agroscience Co., Ltd.	Jiangsu Mindleader
41	Jiangsu Lvdun Plant Protection Agrochemical Experiment Co., Ltd.	Jiangsu Lvdun
42	Jiangsu Lanfeng Biochemical Co., Ltd.	Jiangsu Lanfeng
43	Jiangsu Kwin Group Co., Ltd.	Jiangsu Kwin
44	Jiangsu Greenscie Chemical Co., Ltd.	Jiangsu Greenscie
45	Jiangsu Baoling Chemical Co., Ltd.	Jiangsu Baoling
46	Jiamusi Xingyu Biotechnique Development Co., Ltd.	Jiamusi Xingyu
47	Hunan Haili Chemical Industry Co., Ltd.	Hunan Haili
48	Hubei Tianzenong Bioengineering Co., Ltd.	Hubei Tianzenong
49	Hubei Jinhaichao Science & Technology Co., Ltd.	Hubei Jinhaichao
50	Hebei Xinxing Chemicals Co., Ltd.	Hebei Xinxing
51	Hebei Wanquim Agrochemical Co., Ltd.	Hebei Wanquim
52	Hebei Shuangji Chemical Co., Ltd.	Hebei Shuangji
53	Hebei Sanlen Agrochemical Co., Ltd.	Hebei Sanlen
54	Hebei Kongda Co., Ltd.	Hebei Kongda
55	Hebei Chinally International Trade Co., Ltd.	Hebei Chinally
56	Hainan Zhengye Zhongnong High-Tech Co., Ltd.	Hainan Zhengye
57	Guangzhou Chaowei Daily Chemical Products Co., Ltd.	Guangzhou Chaowei

No.	Full name	Abbreviation
58	Guangxi Tianyuan Biochemistry Co., Ltd.	Guangxi Tianyuan
59	Guangdong Yuanfeng Bioengineering Co., Ltd.	Guangdong Yuanfeng
60	Fujian Shuangfei Daily Chemicals Co., Ltd.	Fujian Shuangfei
61	Fujian Kaili Biotechnology Co., Ltd.	Fujian Kaili
62	Fujian Jinlu Daily Chemicals Co., Ltd.	Fujian Jinlu
63	Fujian Gaoke Daily Chemical Co., Ltd.	Fujian Gaoke
64	Dongguan Ruidefeng Biologic Science Co., Ltd.	Dongguan Ruidefeng
65	Deqiang Biology Co., Ltd.	Deqiang Biology
66	Dalian Raiser Pesticides Co., Ltd.	Dalian Raiser
67	Dalian Chemphy Chemical Co., Ltd.	Dalian Chemphy
68	Dalian Aode Pharmaceutical Plant Protection Co., Ltd.	Dalian Aode
69	Chengdu Rainbow Electronics Group Co., Ltd.	Chengdu Rainbow
70	CAC Nantong Chemical Co., Ltd.	CAC Nantong
71	Beijing Yoloo Bio-Technology Corp., Ltd.	Beijing Yoloo
72	Beijing Green Leaf Century Daily-use Chemicals Co., Ltd.	Beijing Green Leaf

Source: CCM



## 2. Executive summary

During the 12<sup>th</sup> Five-Year Plan (2011–2015), supported by the project of R&D and Industrialization of Green Ecological Pesticides (National Key Technology R&D Program of China), the Chinese pesticide industry has made fruitful achievements in technology innovation. There are 14 new varieties of ingredients obtained the registration, including coumoxystrobin, tricyclooyricarb, SYP-9080, mycophenolic ketone, cyclozaprid, fluoride ether bacteria amide, fluoro-substituted benzothiadiazole derivatives (FBT), yizuomanjing (乙唑麟腈), pyraclostrobine, pyrimorph, methyl thiadiazole induced amine, heptafluoro pyrethrin, flosulfoxamate and chlorine chlorfenapyr, among which, two of them (coumoxystrobin and tricyclooyricarb) have been approved to get the official registration. During this period, the accumulative area for extension of Chinese independent innovation pesticides reached XXX ha, with a year-on-year increase of nearly XX compared with the period of the 11<sup>th</sup> Five-Year Plan, and the sales value amounted to USDXX million (RMBXX billion), up by XXX year on year.

According to statistics from 86 pesticides with independent innovation introduced in this report from 1995 to Nov. 2016, totally XX research units are involved in the research of invention. In terms of the property of research unit, among the 86 independent innovation pesticides, research institutes invented the most, accounting for XX of the total numbers, while the colleges and companies took up XX and XX respectively.

Totally 54 pesticide active ingredients which are independently R&D (including the expired ones) have ever obtained registration between 2002 and 16 Nov., 2016. Among these, XX registrations of pesticide ingredients are still valid, while the rest XX ones have been expired before 16 Nov., 2016 but didn't get a renewal registration.

Among the XX pesticide active ingredients in China within the period of validity, about XX of the pesticides have been on the market, among which, the fungicides which had an excellent market performance included XX, XX, XX and XX.; the insecticides which had an excellent market performance were XX and XX; while all of the herbicides didn't perform well in the Chinese market.

Besides, in 1995–Nov. 2016, there were XX China-made chemical pesticide ingredients which still did not obtain the registration, and most of them are still in the stage of industrial development. As part of the information is open and the delay of information, it is estimated that the actual number exceeds XX.

### 3. What's in the report?

#### 2.1 18 Fungicides

Since 2002, there have been XX novel fungicide active ingredients in China which are still within the period of validity as of 26 Nov., 2016, among which, the firstly registered ones after 2010 (including 2010) include coumoxystrobin, tricyclopyricarb, mycophenolic ketone, fluoride ether bacteria amide and fluoro-substituted benzothiadiazole derivatives (FBT). Benzene kresoxim-methyl is the only one fungicide ingredient re-registered on 28 Aug., 2015, and it will be expired on 28 Aug., 2020.

Developed by Shenyang Research Institute of Chemical Industry, coumoxystrobin is a new type of strobilurin fungicide with independent intellectual property rights. As a broad-spectrum fungicide, it has good control effect on canker, downy mildew, late blight, etc. Especially on apple canker, coumoxystrobin has better control efficacy than many other fungicides.

Table 2.1-1 Basic information of major novel fungicides in China within the period of validity, 2002–16 Nov., 2016

No.	Category	Pesticide	Creation time	Research unit	Time of first registration	Number of pesticides registered	Registrant	Number of TK and formulation registered	Number of product temporarily and officially registered	Patent No.	Application date
1	■	■	■	■	■	■	■	■	■	■	■
2	■	Enostroburin	■	■	■	■	■	■	■	■	■
3	■	■	■	■	■	■	■	■	■	■	■
4	■	■	■	■	■	■	■	■	■	■	■
5	■	■	■	■	■	■	■	■	■	■	■
...	■	■	■	■	■	■	■	■	■	■	■
18	■	■	■	■	■	■	■	■	■	■	■

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture, State Intellectual Property Office of China & CCM

As of 16 Nov., 2016, among the 18 fungicide active ingredients in China within the period of validity, the popular ones were thiodiazole copper, zn-thiodiazole, ningnanmyci and phenamacril.

Table 2.1-2 Market dynamics of major novel fungicides in China within the period of validity, 2002–16 Nov., 2016

No.	Category	Pesticide	Time to market	Number of production license, as of 16 Nov., 2016	Technical capacity, t/a	TK (including TC) registrant	Time of first registration	Market information
1	■	■	■	■	■	■	■	■
2	■	Enostroburin	■	■	■	■	■	■
3	■	■	■	■	■	■	■	■
4	■	■	■	■	■	■	■	■
5	■	■	■	■	■	■	■	■
...	■	■	■	■	■	■	■	■
18	■	■	■	■	■	■	■	■

Source: Institute for the Control of Agrochemicals, Ministry of Agriculture, Ministry of Industry and Information Technology of China & CCM

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