

Welcome to the 3<sup>rd</sup> China-Canada Crop Protection Conference & Product Show

# Crop Protection Market and Pesticide Registration in Canada

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Hilton Toronto/Markham Suites Conference Centre & Spa,  
8500 Warden Ave, Markham, ON L6G 1A5 Canada



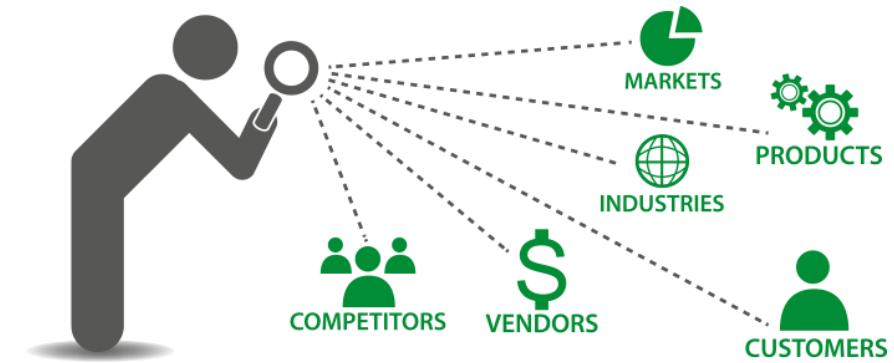
# Content

- Introduction of Hanson Agrochemical Consulting (I, II, III)
- Main Crops and Seeded Area (1,000 Ha) in Canada
- Leading Crop Protection Companies
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- How does Chinese Agrochemicals Reshape the Global Crop Protection Market?
- Hanson is Bridging the Needs and Supplies
- The Key Dealers/Distributors in Canada

# Brief Intro on Hanson Agrochemical Consulting (I)

## – Marketing Research

- Hanson Agrochemical Consulting, a subsidiary of Hanson Industry Company, was established in 2014 in London, Ontario, Canada. There are currently 7 staff members, 4 of whom are responsible for pesticide product registration. Hanson Agrochemical's business covers three segments: pesticide **market research**, **product registration** (including PMRA and EPA) and product **market development**.
- The company has been conducting a comprehensive *pesticide market survey for Phillips McDougall in Asia Pacific*, such as China, Thailand, Vietnam, the Philippines, the collected data include the top 30 pesticides, fungicides and herbicides in sales volume, ex-manufactures values and target crops. Hanson team has updated and published financial performance, product portfolios, R&D, and future directions of *the listed crop protection companies* yearly since 2016.



# Brief Intro on Hanson Agrochemical Consulting (II)

## – Product Registration

- Hanson Agrochemical Consulting is very proficient in the operational procedures for pesticide registration in Canada (PMRA) and the United States (EPA), especially for data compensation. Hanson team has published ***Agrow Product Registration Overview Reports for United States, China, Canada, Thailand, Vietnam, and the Philippines*** during 2017-2018. At present, 21 product registration applications have been submitted and 5 product registrations have been successfully approved. Hanson Agrochemical Consulting has been widely recognized and highly praised by the industry for its customer-first, contract-credit, good-faith, cost savings, and fast registration.
- Hanson Agrochemical submitted ***21 product registration applications*** to PMRA since 2014, including technical and formulation of tebuconazole, the technical of glyphosate, the technical and formulation of glufosinate, the technical of mesotrione, the technical of atrazine, florasulam, boscalid, isoxaflutole and s-metolachlor.
- Among them, the technical products of **glufosinate** (2 manufacturers), **florasulam**, **boscalid**, and **s-metolachlor** have been registered in PMRA.



# Brief Intro on Hanson Agrochemical Consulting (III)

## – Market development

Hanson also attaches great importance to the construction of North American product channels. At present, Hanson has established a good relationship with major distributors in Canada, paving the way for pesticide products to enter the end-user market smoothly.



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Pest Management Centre, AAFC



Health Canada

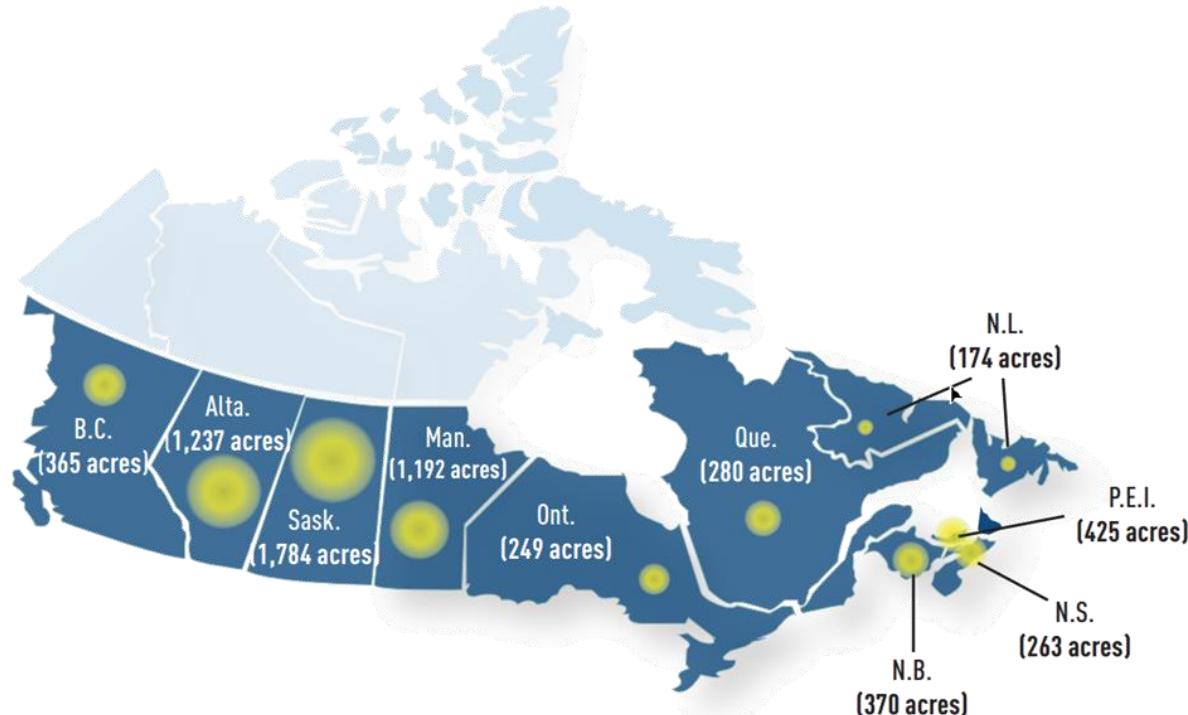
Santé Canada



Farms.com™



# Average Farm Area in Acres by Provinces



1 acre = 6.07 Chinese mu

# Field Crops by Acres



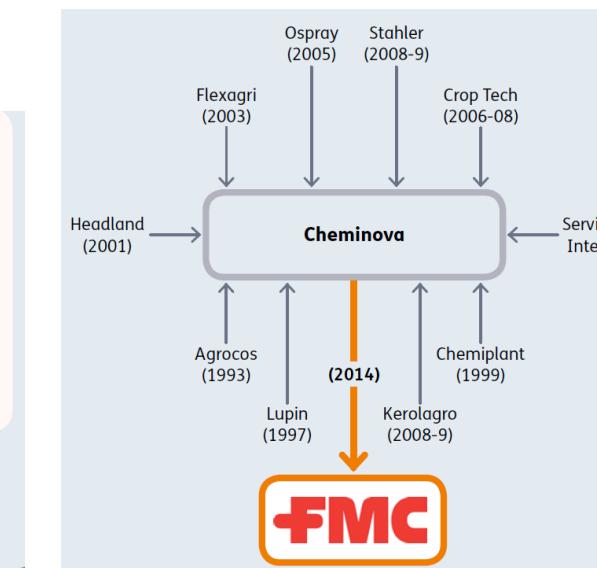
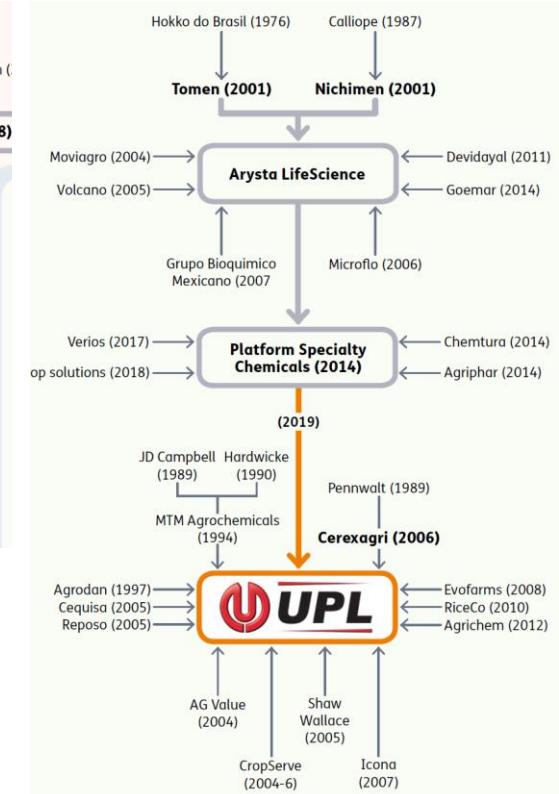
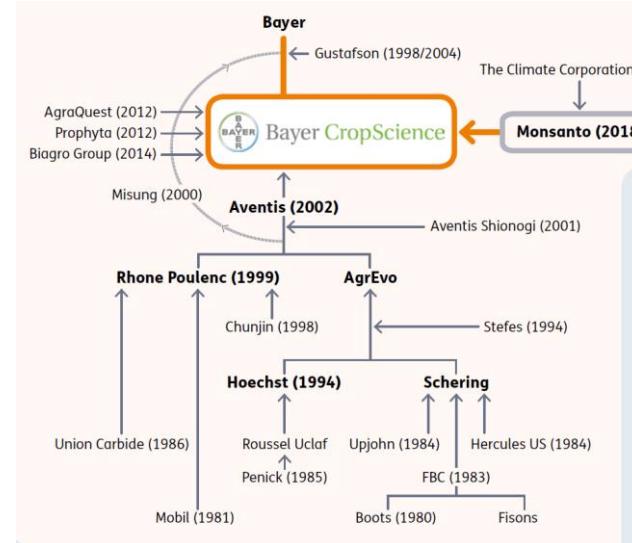
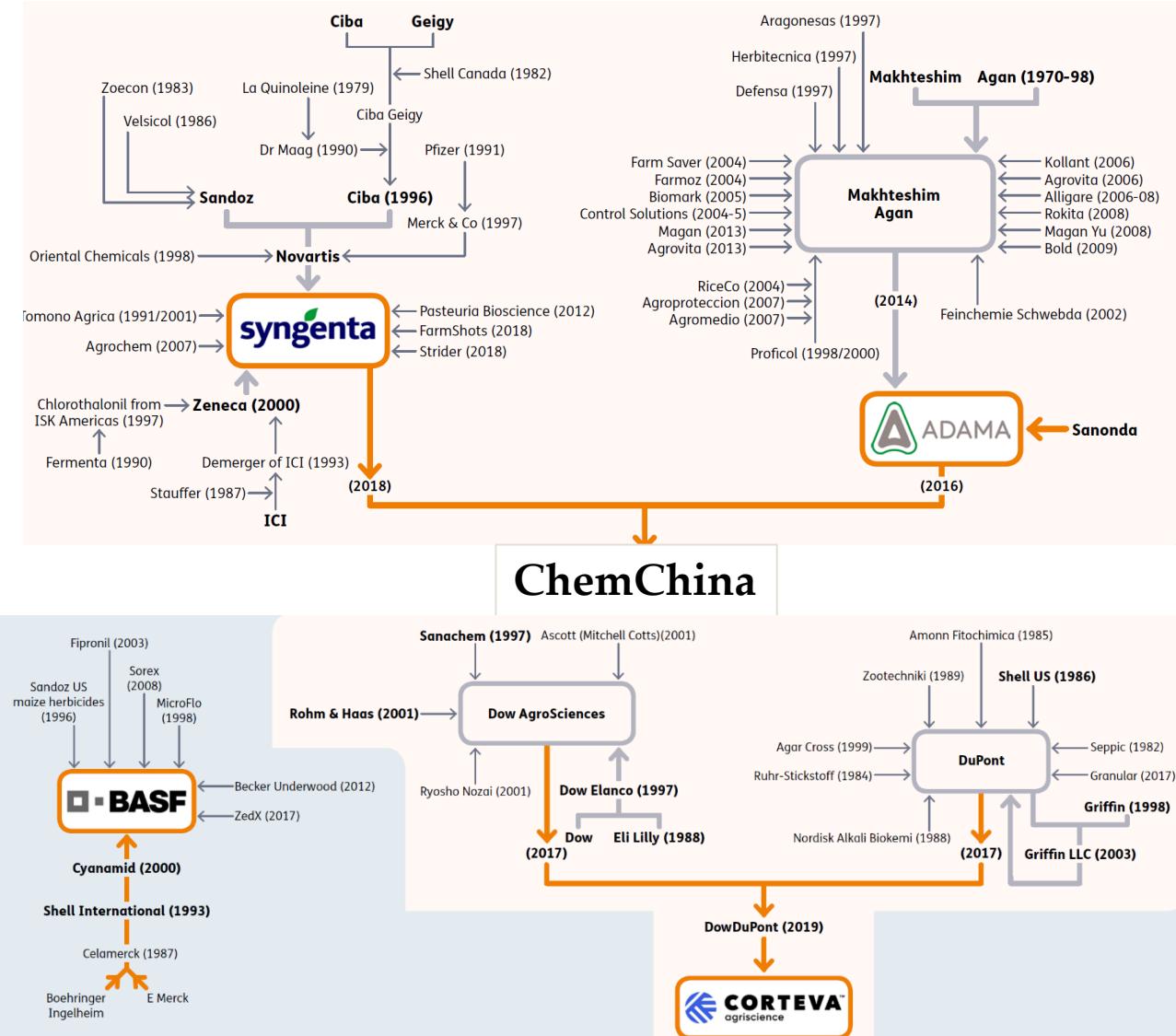
Source: Census of Agriculture, 2016 (the newest)

<http://www.statcan.gc.ca/pub/11-627-m/11-627-m2017012-eng.pdf>

# Seeded Area (1,000 ha) of Principal Field Crops in Canada (2017-2018)



# Evolution of the Leading Agrochemical Companies (2019)



# Leading Crop Protection Market (\$m, 2017)



# Pesticide Market Analysis in Canada (2017)

## Canada

Data Year Ending December 2017

### Industry Rank: 8

#### Total Sales 2017:

Crop Protection

GM Seeds

#### Sales:

\$1,828 million

\$1,430 million

#### Global Market Share:

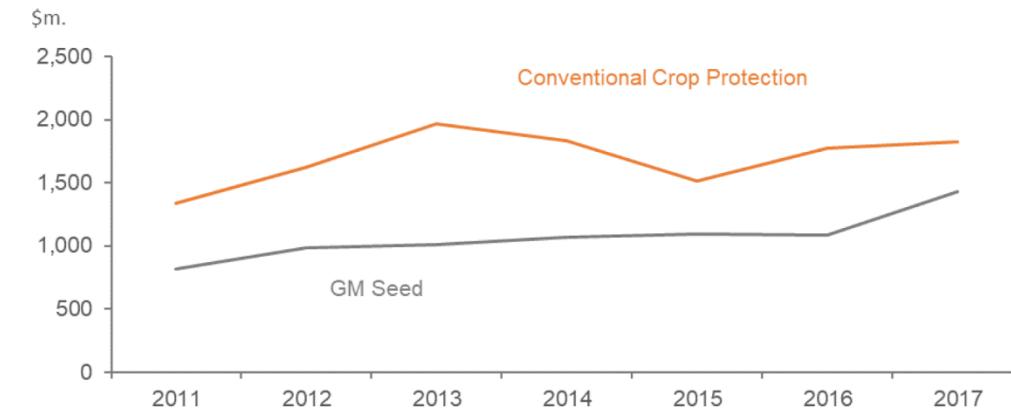
3.4%

6.7%

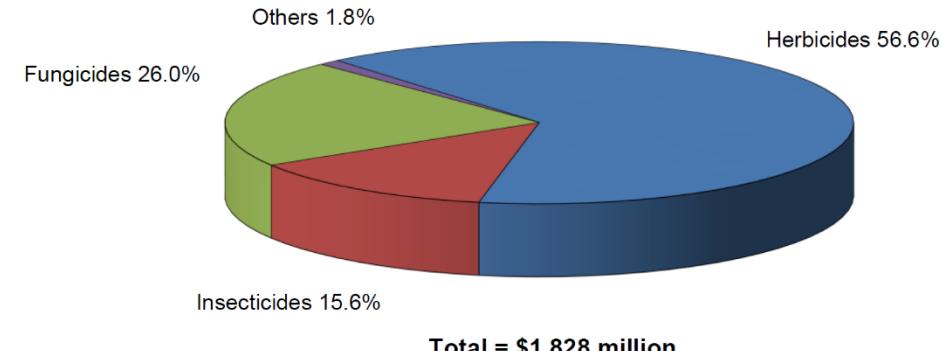
### Market Statistics

	2012	2016	2017	Growth (% or % p.a.)	
				1yr	5yr
Crop Protection (\$m)	1,623	1,770	1,828	+3.3	+2.4
- Market Share (%)	3.1	3.3	3.4	n.a.	n.a.
GM Seeds (\$m)	984	1,087	1,430	+31.5	+7.8
- Market Share (%)	5.3	5.4	6.7	n.a.	n.a.

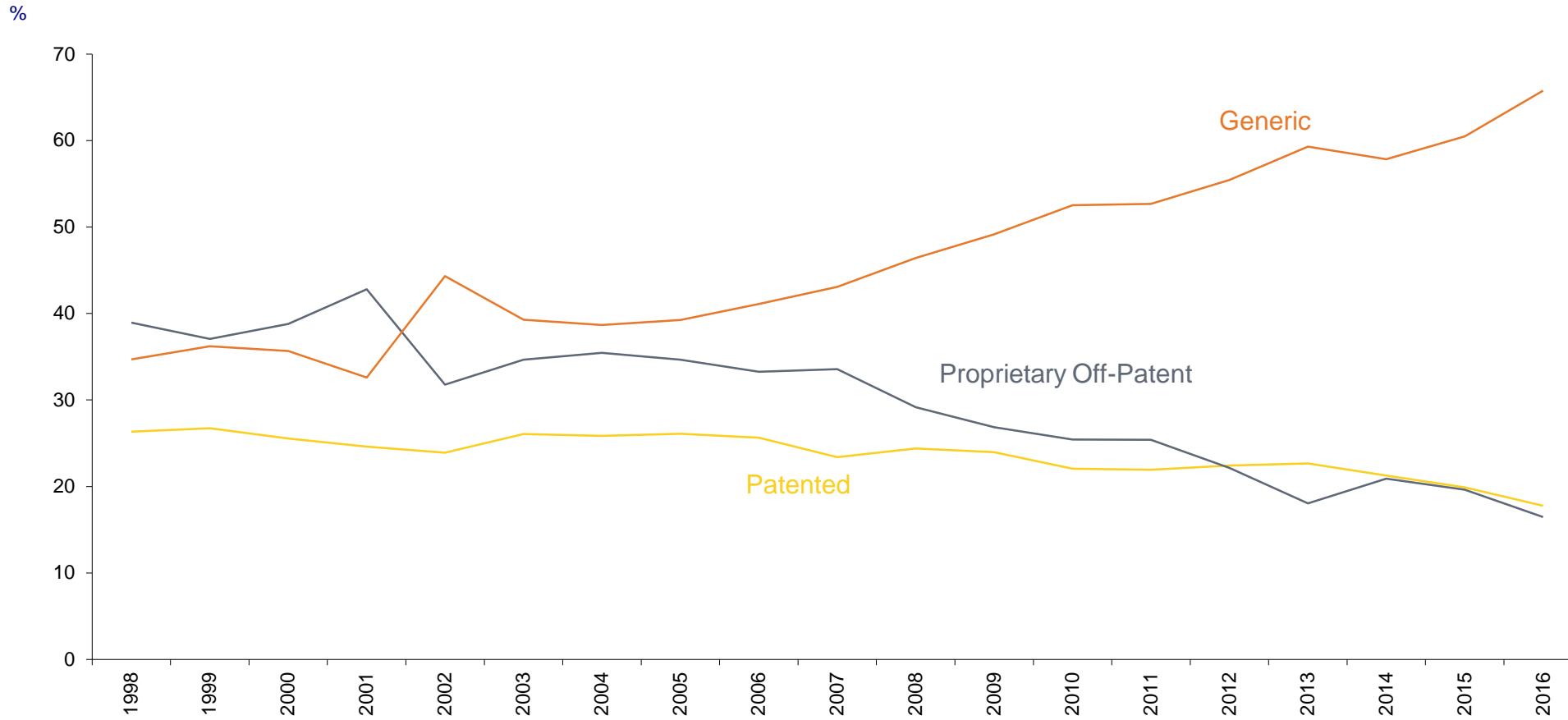
### Crop Protection Sales Performance



### Crop Protection Markets 2017



# Patented vs Proprietary and Off-patent Generics Share



Phillips McDougall | Agribusiness intelligence

# Acceptance of Generic Products in Canada (2018)



Few farmers will even consider a generic product if the price gap versus the original brand is <10%. But if the gap gets to 20% or more, a lot of farmers will take a closer look at the generic option.

# Herbicides on Wheat (2017)

Active Ingredient	Active Area Treated (000 Ha)	Active Volume (000 Kg)	Active Value (\$m)
<a href="#"><u>glyphosate</u></a>	12,169.71	10,599.29	79.26
<a href="#"><u>fluroxypyr</u></a>	4,553.18	426.18	53.93
<a href="#"><u>pinoxaden</u></a>	1,767.16	102.73	50.91
<a href="#"><u>pyrasulfotole</u></a>	1,389.89	40.13	35.15
<a href="#"><u>bromoxynil</u></a>	2,327.53	525.09	34.41
<a href="#"><u>MCPA</u></a>	3,775.70	1,871.68	31.36
<a href="#"><u>pyroxasulam</u></a>	1,172.79	16.51	30.98
<a href="#"><u>clodinafop</u></a>	1,439.07	100.16	27.92
thienecarbazone-methyl	945.62	4.73	27.13
<a href="#"><u>2,4-D</u></a>	2,287.92	1,062.86	22.36
<a href="#"><u>florasulam</u></a>	2,452.35	9.81	21.84
<a href="#"><u>tribenuron</u></a>	1,840.72	28.22	19.20
<a href="#"><u>thifensulfuron</u></a>	908.64	13.63	12.76
<a href="#"><u>flucarbazone</u></a>	527.26	9.97	11.98
<a href="#"><u>clopyralid</u></a>	702.47	151.73	11.11
<a href="#"><u>fenoxyprop</u></a>	568.26	40.91	10.03
<a href="#"><u>halaxifen</u></a>	759.90	7.90	6.83
<a href="#"><u>saflufenacil</u></a>	879.56	32.99	6.27
<a href="#"><u>tralkoxydim</u></a>	357.07	71.41	5.31
<a href="#"><u>metsulfuron</u></a>	421.48	17.70	3.53



# Herbicides on Canola (2017)

Active Ingredient	Active Area Treated (000 Ha)	Active Volume (000 Kg)	Active Value (\$m)
<a href="#"><u>glyphosate</u></a>	12,182.15	9,201.71	69.46
<a href="#"><u>glufosinate</u></a>	4,386.93	2,282.31	66.06
<a href="#"><u>clethodim</u></a>	2,467.82	97.23	16.11
<a href="#"><u>carfentrazone</u></a>	1,206.18	39.62	9.22
<a href="#"><u>saflufenacil</u></a>	653.80	46.32	8.80
<a href="#"><u>bromoxynil</u></a>	1,013.75	228.70	6.97
<a href="#"><u>imazamox</u></a>	243.78	6.52	6.96
<a href="#"><u>imazapyr</u></a>	224.95	2.04	6.53
<a href="#"><u>clopyralid</u></a>	232.03	50.12	5.16
<a href="#"><u>quizalofop</u></a>	642.26	46.24	4.50
<a href="#"><u>florasulam</u></a>	221.04	0.88	1.50
<a href="#"><u>clomazone</u></a>	136.60	68.85	1.34
<a href="#"><u>tribenuron</u></a>	175.75	1.41	0.96
<a href="#"><u>dicamba</u></a>	125.60	14.32	0.93
<a href="#"><u>trifluralin</u></a>	35.35	31.22	0.82
<a href="#"><u>diquat</u></a>	29.98	10.78	0.62
<a href="#"><u>2,4-D</u></a>	74.84	34.61	0.48
<a href="#"><u>diflufenzopyr</u></a>	76.83	3.50	0.35
<a href="#"><u>imazethapyr</u></a>	12.40	0.63	0.28
<a href="#"><u>metsulfuron</u></a>	21.30	0.89	0.13



# F&I on Wheat (2017)

Active Ingredient	Active Area Treated (000 Ha)	Active Volume (000 Kg)	Active Value (\$m)
<u>tebuconazole</u>	3,425.23	331.74	41.21
<u>prothioconazole</u>	2,993.65	114.41	38.44
<u>metalaxyll</u>	3,801.39	8.43	36.06
<u>thiamethoxam</u>	2,116.36	31.30	28.07
<u>difenoconazole</u>	1,183.13	21.01	13.72
<u>sedaxane</u>	1,180.62	4.37	13.70
<u>fludioxonil</u>	1,168.21	2.14	13.43
<u>metconazole</u>	904.99	51.03	13.33
<u>imidacloprid</u>	1,161.17	25.78	10.55
<u>propiconazole</u>	646.26	60.52	6.95
<u>pyraclostrobin</u>	740.08	20.44	6.10
<u>chlorantraniliprole</u>	148.57	6.83	4.13
<u>triticonazole</u>	413.61	3.19	3.18
<u>azoxystrobin</u>	241.35	13.23	2.56
<u>chlorpyrifos</u>	252.78	66.93	2.25
<u>clothianidin</u>	194.41	7.96	1.68
<u>ipconazole</u>	199.72	0.22	1.36
<u>benzovindiflupyr</u>	61.86	3.82	1.16
<u>thiram</u>	154.58	5.89	0.57
<u>carboxin</u>	148.93	4.82	0.54

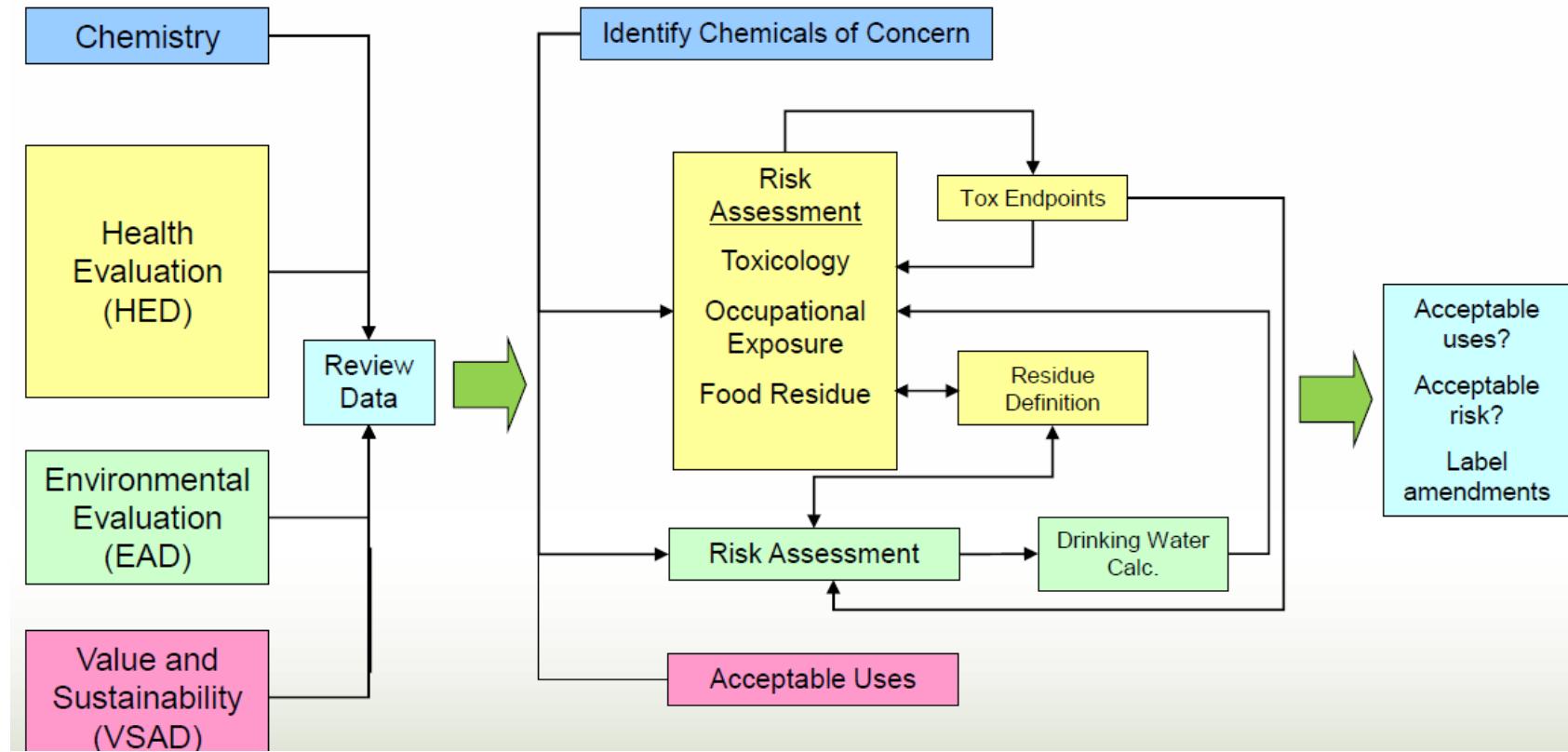


# F&I on Canola (2017)

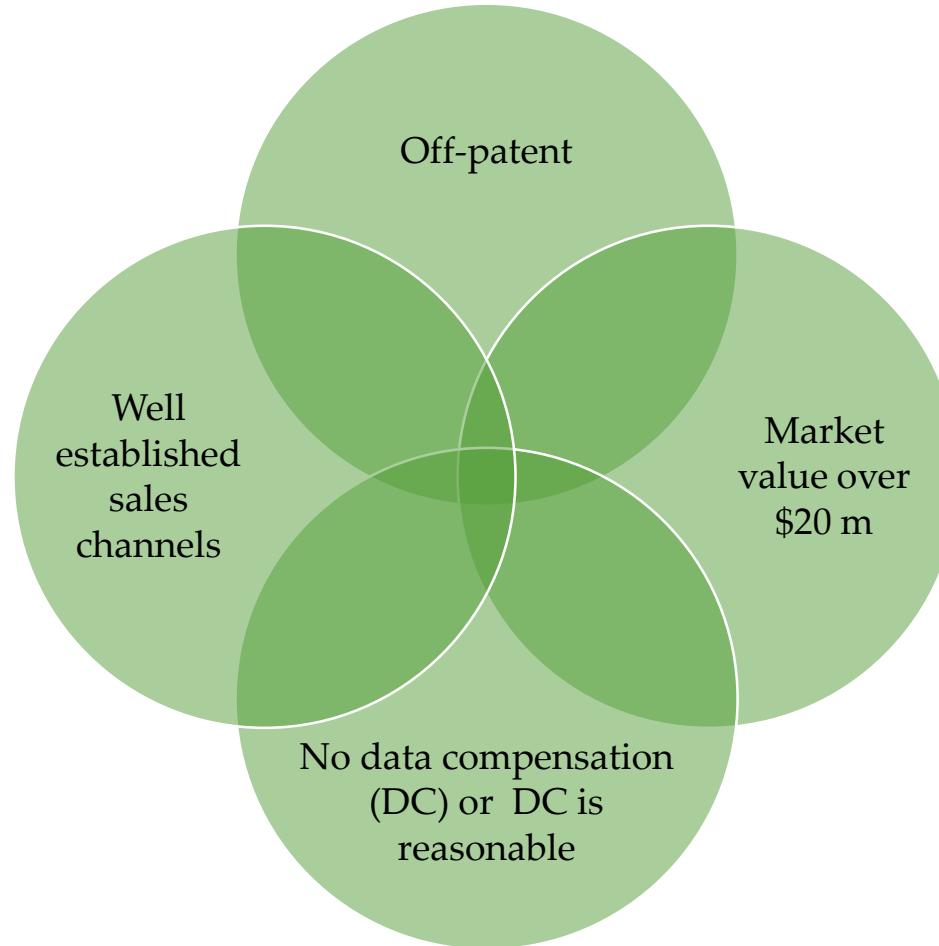
Active Ingredient	Active Area Treated (000 Ha)	Active Volume (000 Kg)	Active Value (\$m)
<u>clothianidin</u>	4,960.43	124.86	53.23
<u>thiamethoxam</u>	3,466.35	86.72	46.44
<u>metalaxyll</u>	2,106.47	1.13	24.92
<u>cyantraniliprole</u>	1,953.55	36.34	21.79
<u>trifloxystrobin</u>	1,239.98	0.77	13.31
<u>fludioxonil</u>	867.96	0.43	11.65
<u>difenoconazole</u>	866.50	1.29	11.61
<u>sedaxane</u>	866.50	0.27	11.61
<u>prothioconazole</u>	422.87	43.98	9.63
<u>lambda-cyhalothrin</u>	654.56	11.13	7.76
<u>deltamethrin</u>	640.05	6.47	6.47
<u>penflufen</u>	1,239.98	0.92	4.92
<u>boscalid</u>	172.47	45.58	4.82
<u>sulfoxaflor</u>	638.84	7.92	4.35
<u>pyraclostrobin</u>	117.14	11.29	2.21
<u>chlorantraniliprole</u>	57.24	2.34	1.41
<u>chlorpyrifos</u>	159.56	40.12	1.35
<u>fluxapyroxad</u>	51.29	2.57	1.13
<u>permethrin</u>	77.16	5.34	0.42
<u>dimethoate</u>	25.88	10.89	0.39



# How is the Product Registration Application being Evaluated?



# Criteria for Generic Active Ingredients to be Registered at PMRA



# Proposed Products to be Registered in PMRA (I)

- 1) 草铵膦Glufosinate（目前没有数据补偿，市场容量世界第一，折合原药需求4000吨）； Glufosinate (currently no data compensation, the world's largest market globally, equivalent to 4,000 tons of technical in demand).
- 2) 草甘膦Glyphosate（市场容量大，1.5亿美元）； Glyphosate (annual market value is \$150 million).
- 3) 2,4-DB (市场容量为574万美元，仅次于美国); market value is \$5.74 million, the 2nd largest market in the globe.
- 4) 烯草酮Clethodim (市值近2000万美元)； market value is \$20 million.
- 5) 烷草酯Clodinafop-propargyl (麦类面积大，草害重，值得登记)； large acreage of wheat, heavy grass infection, worth registering
- 6) 溴苯腈Bromoxynil (麦类苗后除草，市值2500万美元)； post emergence herbicide in wheat field, market value of 25 million US dollars
- 7) 双氟磺草胺Florasulam (仅次于俄罗斯，世界第二大市场，市值2500万美元，目前免数据补偿)； the largest market in the globe, market value of \$60 million
- 8) 精异丙甲草胺S-metolachlor (市场大，无数据补偿)； huge market, no data compensation
- 9) 甲氧咪草烟 Imazamox (市值1700万美元);
- 10) 甲氧磺草胺Pyroxsulam (世界第一大市场，达5300万美元，关注专利期); the largest market in the globe, market value of \$53 million, the patent issues should be tracked
- 11) 氟唑磺隆 (世界第一大市场，2300万美元，专利已过)； the largest market in the globe, market value of \$23 million, molecule patent expired



# Proposed Products to be Registered in PMRA (II)

- 12) 氟磺胺草醚 Fomesafen (第二大市场, 4400万美元); the 2nd largest market, market value of \$44 million
- 13) 氯嘧磺隆 Chlorimuron (第三大市场, 886万美元); the 3rd largest market, market value of \$8.86 million
- 14) 高效氯氟氰菊酯 Lambda-syholothrin (市值1200万美元); market value of \$12 million
- 15) 咯菌腈 Fludioxonil (第四大市场, 1500万美元); the 4th largest market with value of \$15 million
- 16) 丙硫菌唑 Prothioconazole (世界第二大市场, 1.02亿美元); the 2nd largest market, market value of \$102 million
- 17) 吡唑醚菌酯 Pyraclostrobin (第三大市场, 市值3000万美元, 无数据补偿); the 3rd largest market, market value of \$30 million, no data compensation currently
- 18) 戊唑醇 Tebuconazole (第四大市场, 市值3500万美元); the 4th largest market with value of \$ 35 million
- 19) 灭菌唑 Triticonazole (第一大市场, 760万美元); the largest market with value of \$7.6 million
- 20) 咪酰菌胺 Boscalid (世界第五大市场, 1300万美元, 无数据补偿). the 5th largest market with value of \$13 million, no data compensation currently
- 21) 氯氟吡氧乙酸 Fluroxypyr (世界第一大市场, 市值6000万美元); largest market with market value of \$60 million
- 22) 呋啉草酯 Pinoxaden (世界第一大市场, 8000万美元, 密切关注专利期); market value of \$17 million



# Big Pesticide Distributors/Dealers in Canada



Arysta LifeScience



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# Small Distributors/Dealers in Canada

Aceto Agricultural Corp.  
Adjuvants Unlimited  
AgMarket Results  
**AgriTrade**  
AkzoNobel Surface Chemistry LLC  
Albaugh Inc.  
Ashland, Inc  
Birdsong Peanuts  
Brandt Consolidated  
Chemorse  
Cimarron Label  
Clariant Corporation  
Compliance Services Int.  
Council of Producers & Distributors of Agrotechnology  
Croda Inc.  
CST-Lamberti Group  
ENSAFE  
Ethox  
Evonik Goldschmidt Corp.  
Exacto Inc.  
ExcelAg Corp. USA  
Exponent  
ExxonMobil Chemical  
Fine Americas  
Garrco Products

Helena Chemical Co.  
Huntsman Corporation  
Italpollina USA, Inc.  
Keller & Heckman  
Kincannon & Reed  
KRS, Inc.  
Landis International  
Lee Container Corporation  
Lonza Agro Ingredients  
Marketing Arm International  
Oxiteno USA, LLC  
Precision Laboratories  
Rosen's  
Royal Chemical  
Sipcam Advan USA Inc.  
Solvay, Inc.  
Spring Trading Company  
Stepan Company  
Stillmeadow, Inc.  
Technology Sciences Group  
Tide International USA, Inc.  
United Suppliers  
Vive Crop Protection  
Wilbur-Ellis Company  
Winfield Solutions, LLC

# The Top 10 Distributors in Canada

- **CPS (Crop Production Service)** --- <http://www.cpsagu.com/map/Default.aspx> , mainly in prairie provinces.
- **Richardson** --- <http://www.richardson.ca/> largest private company in Canada
- Federated coop --- **federated co-operatives limited**,  
<https://www.coopconnection.ca/wps/portal/fclretail/FCLInternet/AboutUs/FCL/>, active in BC, SK, AB, MB.
- **La Coop fédérée** --- <http://web.lacoop.coop/en/crop-production>
- **Cargill** --- <http://www.cargill.ca/en/products-services/index.jsp>
- **Univar** --- <http://www.univar.com/en/Canada/Industries/Agriculture.aspx>
- **Paterson grain** --- <http://www.patersongrain.com/for-farmers/crop-inputs/crop-protection/>
- **Interag** – (the distribute Bayer products only) --- <http://interag.ca/our-company/default.aspx>
- **McCains** --- <http://www.mccain.com/about-us/board-of-directors>
- **Cavendish Agri Service** --- <http://www.cavagri.com/cavendish-agri-products-cropprotectants.aspx> East Canada (maritime)
- **Synagri** --- <http://www.synagri.ca/crop-protection-crop-health-s42/> (BASF), Quebec

# Rising China

- **Tier 1**

- Bayer (Monsanto)
- **Syngenta**
- BASF
- Corteva (Dow/Dupont)
- FMC
- **Adama**

Bigger than 2.0 b\$

- **Tier 2**

- UPL (Arysta)
- Sumitomo

1.8-2.0 b\$

- **Tier 3**

- Nutrichem
- Rainbow
- Fuhua Tongda
- Nanjing Red Sun
- Sinochem
- Huifeng
- Zhejiang Wynca
- Hubei Sanonda



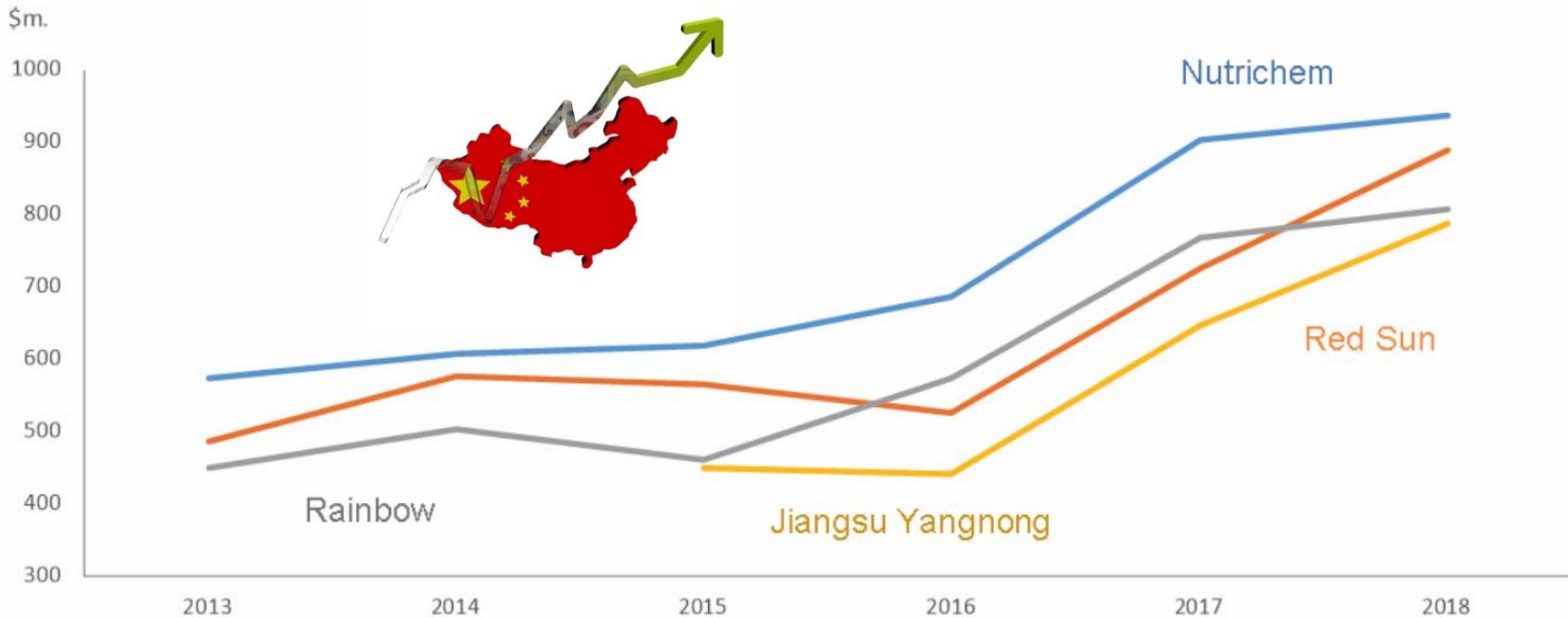
0.5-0.8 b\$

- **Tier 4**

- Gowan
- Sipcam
- Smaller Chinese players
- Indian players

less than 0.5 b\$

# Sales of the leading Chinese companies in 2018



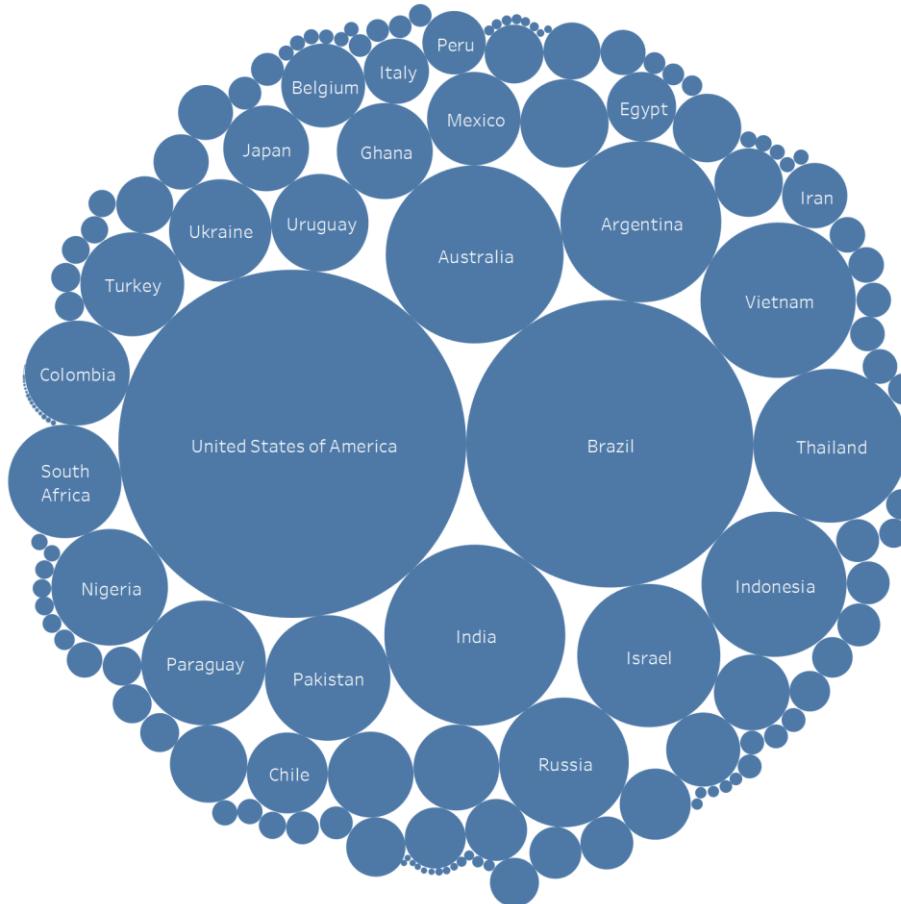
Source: Phillips McDougall, 2019

# Summarization on Chinese Pesticide Exports in 2018

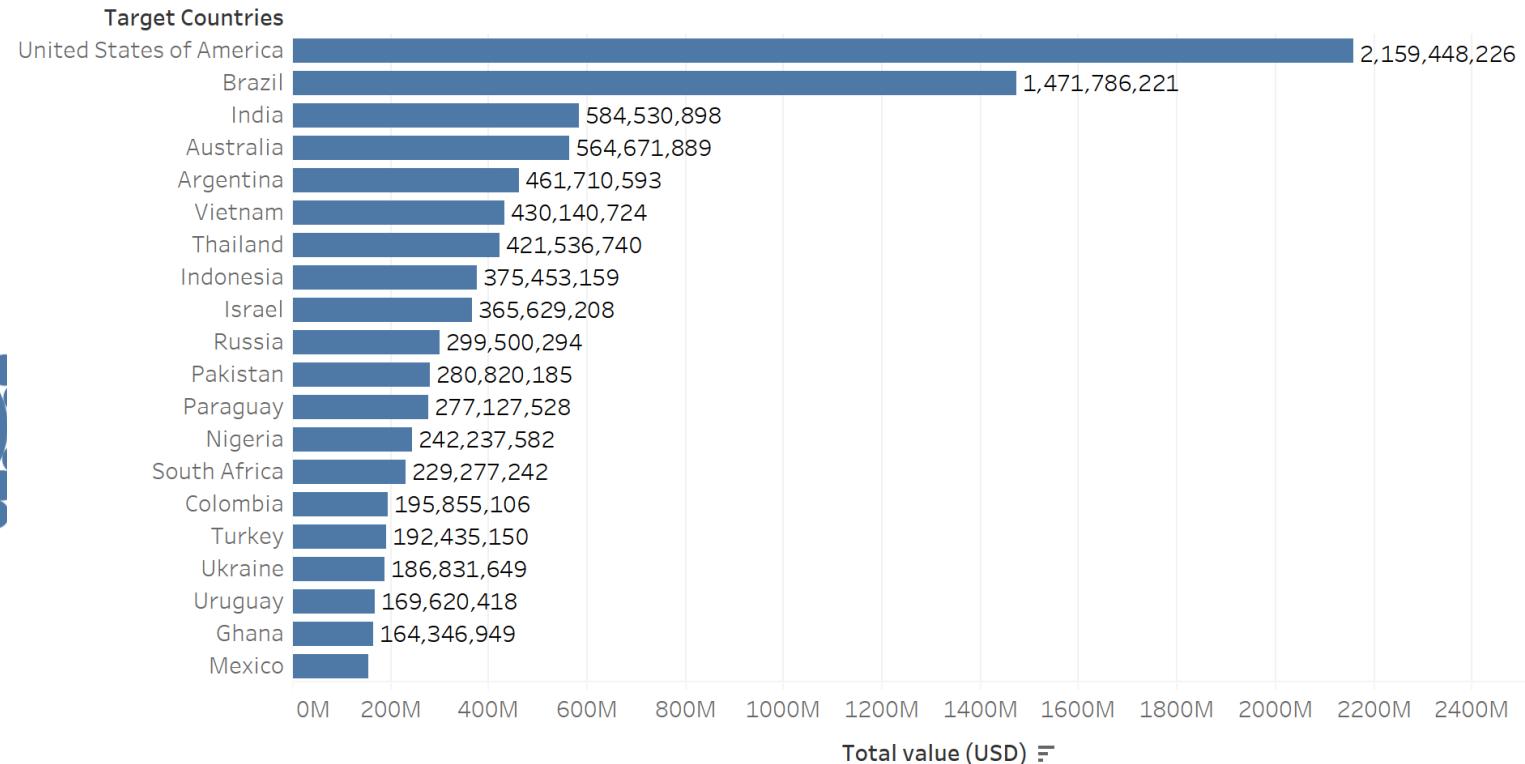
- Herbicides, insecticides/miticides, fungicides, rodenticides, PGRs, bio-pesticides
- 103,222 deals/shipments
- 457 solo-AI products, 477 mixed AI products (2 or more AIs in a product)
- 1,651 product manufacturers/exporters
- **12.45 billion USD**



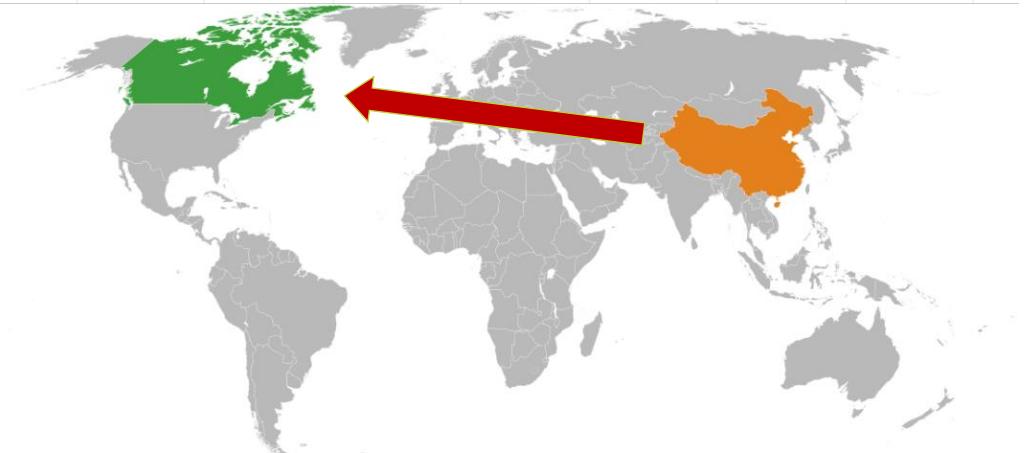
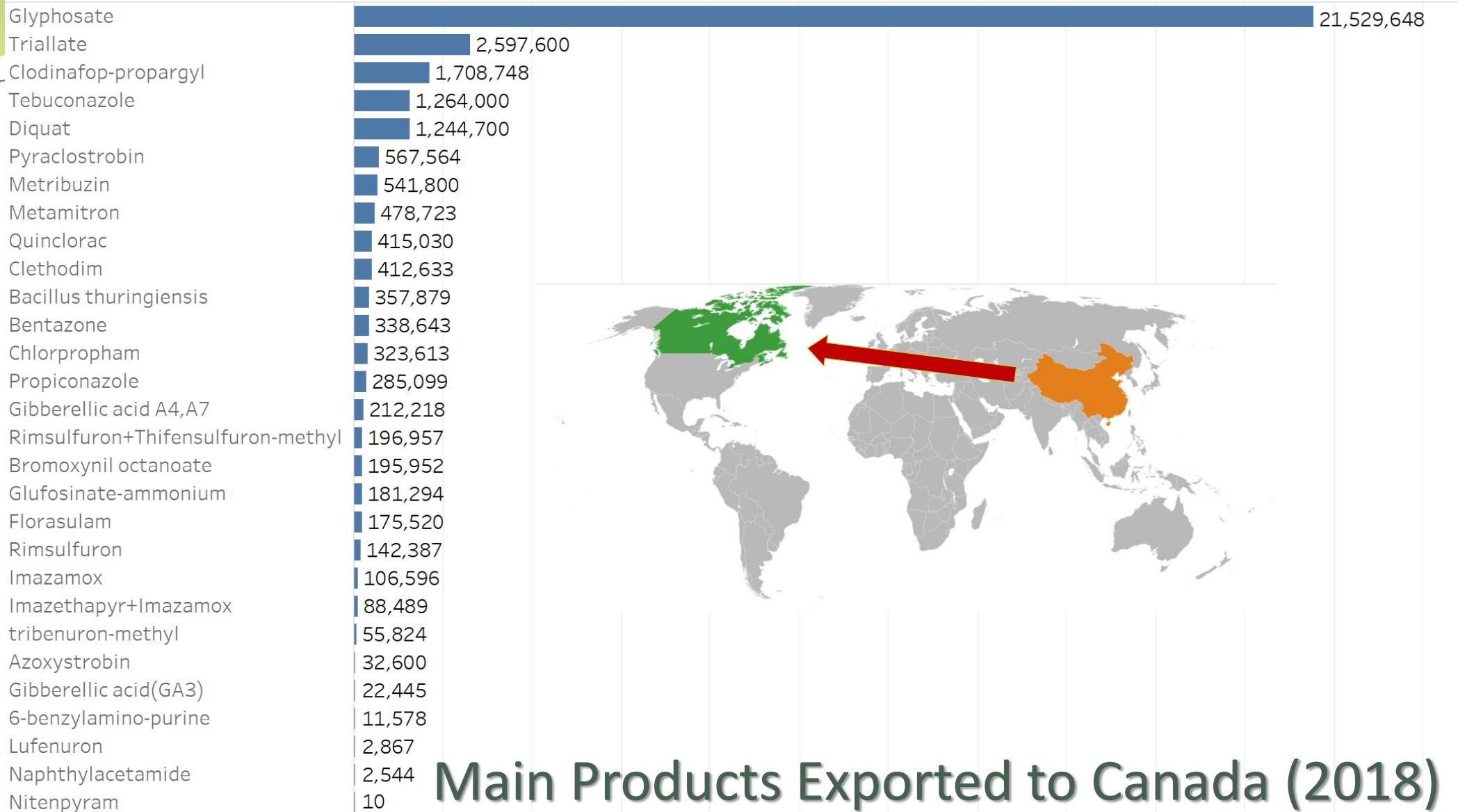
# Top Target Countries of China-made Pesticides



164 target countries



## Product AI names

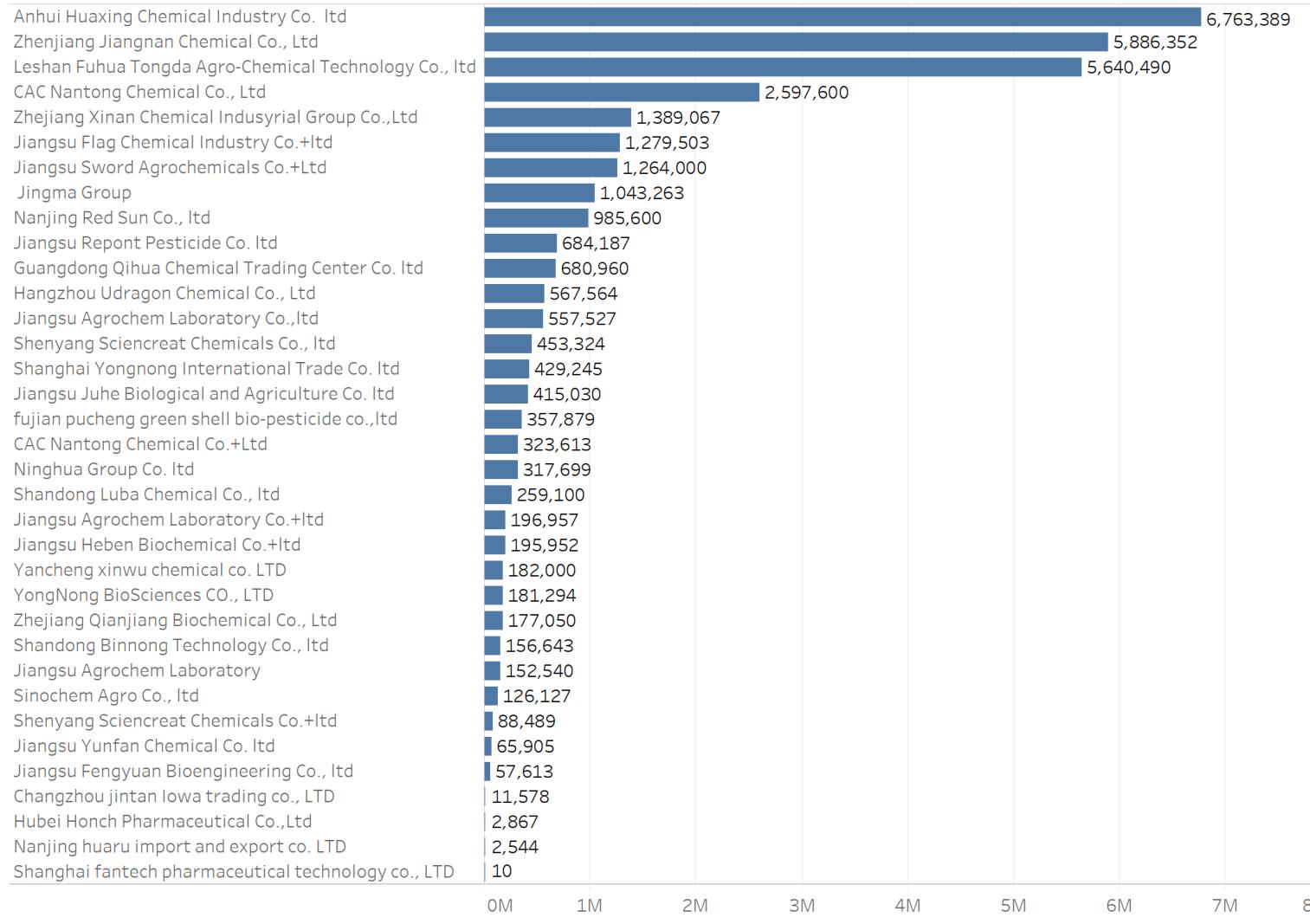


## Main Products Exported to Canada (2018)

Total value (USD) ₦

# Main Exporters Targeted to Canada (2018)

## Product Owner



2018中国 农药出口加拿大汇总			
公司名称	数量	折吨	客户-估计
总计	9476838.68	9477	
安徽华星化工有限公司	2940362	2940	
四川省乐山市福华通达农药科技有	2273362	2273	
镇江江南化工有限公司	1296000	1296	陶氏
浙江新安化工集团股份有限公司	770328	770	陶氏
捷马化工股份有限公司	531420	531	
南通泰禾化工股份有限公司	512258.08	512	陶氏
广东奇化化工交易中心股份有限公	352640	353	
南京红太阳股份有限公司	153600	154	
江苏剑牌农化股份有限公司	80000	80	
永农生物科学有限公司	75785.2	76	
中化农化有限公司	59160	59	
江苏瑞邦农药厂有限公司	52430	52	
沈阳科创化学品有限公司	44307	44	
山东绿霸化工股份有限公司	42480	42	
杭州宇龙化工有限公司	36792	37	
江苏中旗作物保护股份有限公司	35000	35	陶氏
中宁化集团有限公司	32418.4	32	
上海永农国际贸易有限公司	26757	27	
山东滨农科技有限公司	26196	26	
福建浦城绿安生物农药有限公司	25700	26	
盐城欣唔化工有限公司	24000	24	
江苏禾本生化有限公司	18002	18	
江苏省农用激素工程技术研究中心	14560	15	
江苏聚和生物农业有限公司	12800	13	
南通泰禾化工有限公司	12258	12	
浙江丽晶化学有限公司	10000	10	
江苏省农用激素工程技术研究中心	9918	10	38吨
江苏云帆化工有限公司	7800	8	
浙江钱江生物化学股份有限公司	400	0	
湖州新世纪国际贸易有限公司	100	0	
江苏丰源生物工程有限公司	3	0	
上海泛泰克医药科技有限公司	2	0	